THE MONTHLY REVIEW

PUBLISHED MONTHLY BY

American Electroplaters' Society

545 FIFTH AVENUE, NEW YORK, N. Y.

July, 1943 • Vol. XXX, No. 7

Subscription $3.00 a Year

★

NATIONAL HEADQUARTERS

545 Fifth Ave., New York, N. Y. • Phone MUrray Hill 2-4631

JACK BAIN, *Publisher*

★

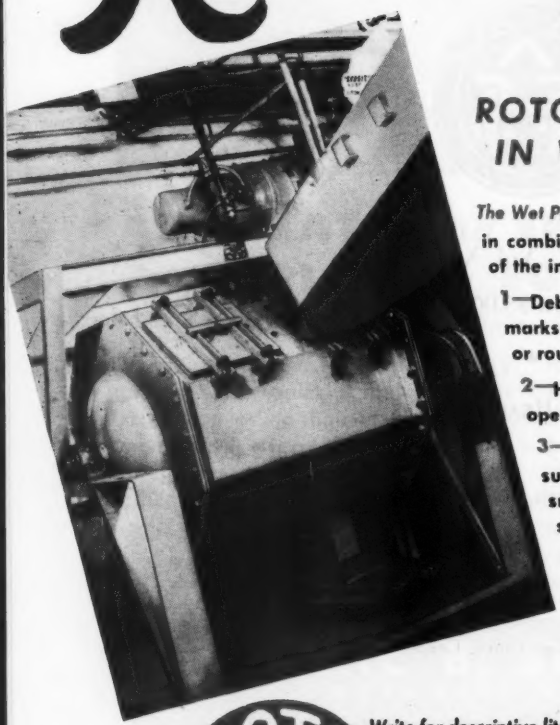
E. T. CANDEE, *Executive Secretary and Acting Editor*

Box 791, Waterbury, Conn.

Entered as second class matter January 21, 1943, at the post office at New York, N. Y., under the Act of August 24, 1912.

...when you put them in a Roto-Finish BARREL..

you're actually saving TIME and MONEY



ROTO-FINISH IS AVAILAB IN WET OR DRY PROCES

The Wet Process combines three separate operations— in combination or separately, according to require of the individual job.

1—Deburring or grinding eliminates spinning, marks or "orange peel." It also smoothes sharp co or rough edges before assembling.

2—Honing produces a much finer job than gri operations, and gives the work a bright finish.

3—Coloring is a fine finishing operation, superior to the best hand-finished job—produc smooth, bright finish. Especially adaptabl small, irregularly shaped parts.

The Dry Process effectively smoothes the s and edges of the parts through an ab action. It turns the parts out clean and being well suited for handling brass cas light gauge steel, and brass stampings die cast stampings before plating.

Write for descriptive literature and name of our nearest distributor.

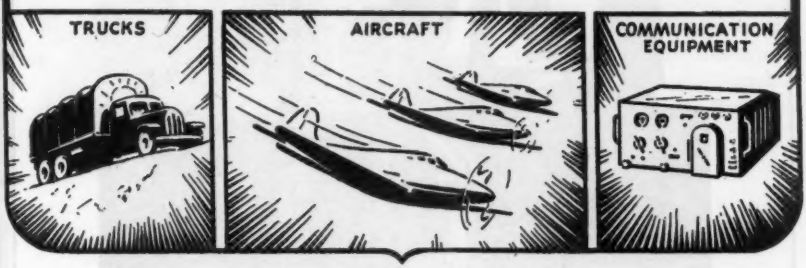
ROTO FINISH

STURGIS PRODUCTS CO.
Sole Owners

STURGIS PRODUCTS CO.

STURGIS • MICHIGAN

Degrease Parts *FASTER* Before CADMIUM PLATING On These Weapons of War



WAR production is QUANTITY production at a FAST pace! It is essential, therefore, in applying cadmium plated finishes to your war supply items, that every process be geared to this wartime standard. One of the most important . . , that which mainly determines the adhesion and smoothness of the finish . . . is getting a CHEMICALLY CLEAN, no water-break surface on ALL your steel parts.

A War Material for War Work!

You will find that specially designed OAKITE COMPOSITION No. 90, used for ANODICALLY removing drawing, stamping, buffing compounds, smut, shop dirt, oil and grease, does it SPEEDILY and MORE THOROUGHLY . . . is SAFER to use because its foam density does not build up hydrogen in quantities, thus helps assure greater saftey from explosion due to arcing. Excellent for hard water areas. Used in plating departments and contract finishing shops the Nation over, it is today's best answer for degreasing steel.

For complete data on how Oakite Composition No. 90 can HELP YOU keep production UP and rejects DOWN, write today . . . there's no obligation!

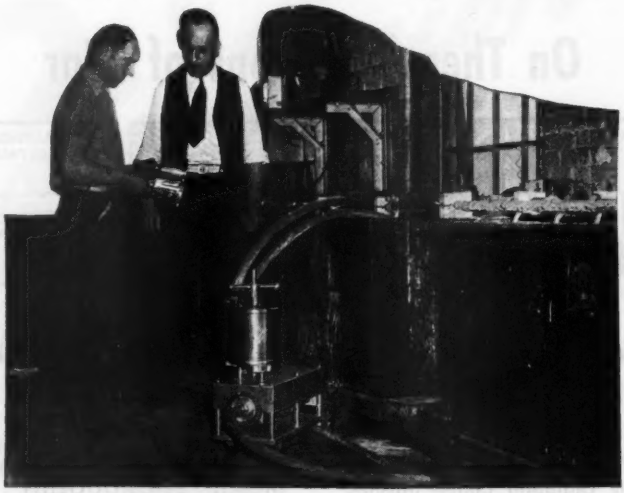
OAKITE PRODUCTS, INC., 40 Thames St., New York 6, N. Y.

Technical Service Representatives Located in All Principal Cities of the United States and Canada

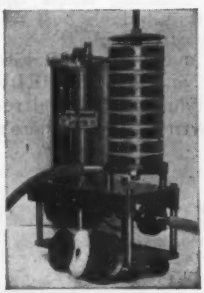
OAKITE MATERIALS · METHODS · SERVICE — Buy Bonds for Victory — **CLEANING** FOR EVERY CLEANING REQUIREMENT

Alsop "Sealed Disc" Filters

(for plating solutions)



"CLEAN PLATING SOLUTIONS BY FILTRATION!"



"But Jim, not just filtration – but 'Sealed Disc' filtration. There's a big difference. See these two pieces, the one in my right hand is a beautiful finish the result after our solution was completely cleaned of all dirt, sediment and impurities generally present in the materials we use in making our solutions. Before 'Sealed Disc' filtration the result was as in the piece in my left hand. Too much foreign impurities in the tank. These may mean spotty finish, that means refinishing time lost and production slower. With this small compact filter we increase production and get finer finishes. Much fewer rejects."

Send for our filter book.

ALSOP ENGINEERING CORP., 24 Grand Street, Milldale, Conn.

THE MONTHLY REVIEW

THE COVER

"SECRET FORMULA"

Cover illustration furnished through the courtesy of Mr. Charles M. Douglas of the Douglas Chemical Company, Ltd., Montreal, Canada. Member of A.E.S. Montreal Branch.

CONTENTS

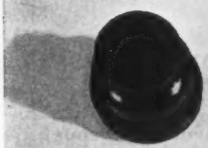
Wagner—Editorial 595
Irenas — Cadmium Plating 603
Wernlund — Thanks for Everything 610
Savage — Paper Awards 612
Helmle — Photographic Exhibit 614
Hodge — 1943 Year of Destiny 618
Getting Personal 640
National Officers 1943-44 644-646
Candee — 31st Annual Convention 647

DEPARTMENTS

Industry News 652
Question Box 654
Abstract Section 656
Branch News 663
New Equipment 674
Book Department 678
Membership Report 680
Buyers' Guide 685
Branch Directory 690
Advertisers' Index 692

War Blackening

FOR ALUMINUM • COPPER • ZINC • STEEL

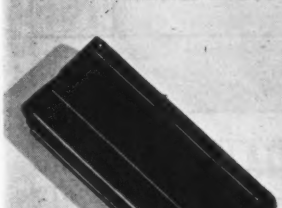


EBONOL "A" FOR ALUMINUM

A process for the direct blackening of aluminum and its alloys by simple immersion in two solutions. Jet black finishes on aluminum can be obtained in 7 minutes on large objects and small objects treated in bulk. The finish is hard and adherent and does not have to be protected by lacquer.

EBONOL "C" FOR COPPER AND BRASS*

Ebonol "C" is a process for simple, low-temperature, direct blackening of copper and almost all copper alloys. Both dull and shiny black finishes can be obtained. Finish is very adherent and has good wear resistance. Blackening done by immersion in from 3 to 10 minutes at 200 to 215°F. *PATENT PENDING

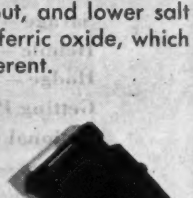


EBONOL "S" FOR STEEL AND IRON

Producers of war goods are finding EBONOL "S" to be the IDEAL BLACK. Only one bath is required, and the low temperature (280-290°F) means easier control, less fumes, less drag-out, and lower salt consumption. The finish is ferroferric oxide, which is hard, deep black, and adherent.

EBONOL "Z" FOR ZINC AND ZINC ALLOYS

A process for direct blackening of zinc and zinc alloys producing a hard, adherent, beautiful black in from 2 to 7 minutes. Now being widely used in place of plating and enameling, and as an undercoat for lacquers and enamels on zinc plate.



THE ENTHONE CO NEW HAVEN CONNECTICUT

REPRESENTATIVES IN PRINCIPAL CITIES

Cadmium Plating

By ZACHARY IRENAS

General Instrument Corporation, Elizabeth, N. J.

WHEN protection against corrosion is the prime factor, no metal is more important than cadmium – zinc being the only one that approaches it in this respect. Cadmium like zinc is a sacrificial metal, that is, it will corrode while protecting the basis metal. Obviously, it should not be used as a decorative coating.

Cadmium is perhaps the least known and the rarest of all the common metals. It is not found in its free state and there is no abundantly occurring mineral of which cadmium is the principal constituent. Cadmium is found in small traces as cadmium sulphide and cadmium carbonate, jointly with zinc sulphide and zinc carbonate ore. Except for a small amount which comes from lead and copper ores, the bulk of our cadmium supply comes from zinc ore. Cadmium is used not only as a protective coating on steel, copper and brass but it is also used as a component of various alloys. For example, bearings are often made from alloys containing cadmium; and a low coefficient of friction has been claimed for them.

Cadmium was discovered in 1817 by Stromeyer but it is not until 1919 that we find the first successfully operated cadmium plating solution for industrial purposes. The color of cadmium is white with a bluish tint. Its atomic weight is 112.41 valence 2. and its M. P. is 320°c. It is a soft metal and therefore, it is impractical to use it as a coating on articles which have to withstand wear and tear. On the Mch scale it shows a hardness of 2. as compared with 1.5 for lead and 1.8 for tin.

Per dollar of coating cost, zinc yields more protection against corrosion for steel than any other metal, nevertheless because of its many advantages cadmium is extensively used for the same purpose.

1. Cadmium plated parts are more easily soldered than zinc plated parts.

2. The cadmium plate has a more pleasing appearance than the zinc plate.

3. Bright cadmium plating solutions are more easily controlled and operated than zinc ones.

4. Cadmium deposits much faster than zinc.

5. The electrical resistance of cadmium is lower than that of zinc.

6. In a saline atmosphere, a given thickness of cadmium will protect steel more than a similar thickness of zinc.

Cadmium may be deposited from either a cyanide or an acid bath. Because of its superiority, industry uses the cyanide type bath almost exclusively. The cyanide cadmium plating solution is a comparatively easy plating bath. However, if proper control is not exercised, serious trouble may arise. Rough and fitted deposits are often encountered. Solutions low in throwing power are not uncommon. In general, a cadmium plating bath prepared according to one standard formula will not be satisfactory for all types of work. The concentration of the constituents of the bath should vary from one solution to another depending on the nature of the articles to be plated.

CONSTITUENTS OF THE CADMIUM SOLUTION

The cadmium plating bath consists of the complex cadmium, cyanide salts, free cyanide, caustic soda, sodium carbonate, and ammonia. The last three mentioned are not added to the bath, and are formed in the following manner:

$$CdO + 4\,NaCN + H_2O = Na_2Cd\,(CN)_4 + 2Na\,OH$$

$$2\,NaCN + 2\,H_2O + 2\,NaOH + O_2 = 2\,Na_2CO_3 + 2\,NH_3$$

The presence of ammonia can readily be detected by the odor of the solution.

The constituents of the bath may vary over a wide range, depending entirely on exactly what is expected from the plating bath. When the throwing power is the important factor, a low metal content and a high total cyanide should be used. It is obvious that such concentration will result in a low cathode efficiency; and in order to obtain a definite plating thickness considerably more time is required in above solution than in a highly concentrated one. In order to meet specifications on irregularly shaped articles when plated in the low metal content bath, articles are often plated for one hour or more. When an object is plated for that length of time, the chances are rough deposits are increased and a solu-

High-Speed Production + Cleaning

This is a war of men against metal. Of machine against machine, and of metal against metal.

• Metal cleaning is an important part of all present-day manufacture—whether it is machine guns, airplane parts, cartridge cases (brass and steel), A. P. and H. E. shot, or ammunition boxes. Ammunition and equipment cannot be put into service faster than the component parts can be cleaned.

• In these swift-moving times Wyandotte Field Engineers are on call twenty-four hours a day. They are constantly in the field — working with those in charge of metal degreasing in the arsenals and the production shops of the nation.

• If you have a problem in metal cleaning, the chances are that a Wyandotte man has met that problem or its twin brother, in the course of his daily work. He will be glad to work with you to obtain improved results, increased speed, or lower costs.

• *Many times Wyandotte has solved all three problems at once. We are ready to help you NOW!*

Wyandotte

SERVICE REPRESENTATIVES IN 88 CITIES

Wyandotte Chemicals Corporation

J. B. FORD DIVISION • WYANDOTTE, MICHIGAN

Wyandotte Chemicals Corporation consolidates the resources and facilities of Michigan Alkali Company and The J. B. Ford Company to better serve the nation's war and post-war needs.

tion free of suspended matter cannot be overemphasized. Often filtration alone is not sufficient and bagging of cadmium anodes should be resorted to. In the low metal — high cyanide cadmium bath the anode efficiency is higher than cathode one. Therefore, no periodic additions of CdO or $Cd(CN)_2$ are necessary. On the contrary, there is a tendency for cadmium metal to be built up above desired concentration. In order to counteract it, it is advisable to use steel and cadmium anodes simultaneously. This will provide a large enough anode surface and also prevent the accumulation of cadmium metal in the solution above desired concentration. The metal content of a cadmium bath may be maintained at a fairly constant level by using this method. The cyanide concentration should be determined frequently. A low cyanide concentration will result in low conductivity and lack of anode corrosion. Too high a concentration will result in spongy deposits.

Best results are obtained with a pH range of 12.0 to 13.0 under 11.5 the adhesion is poor and above 13.0 the adhesion is slightly less satisfactory.

Without the use of addition agents, it is exceedingly difficult to operate a cadmium bath with a current density above $15A/Ft^2$. Various addition agents have been used to improve the character of the deposit. For example, dextrin, starch, caffeine, Postum has been used. The character of a cadmium deposit without the use of a brightening agent is of an exceedingly poor character and appearance. Addition agents also improve the throwing power of the bath and its bright current density range. Some commercially used brighteners contain various organic chemicals with either nickel or cobalt added. Although the cadmium plate is fairly bright, with the use of a brightening agent it is often complemented with a bright dip. The bright dip gives to the plated object a uniform finish as well as a brighter surface. During the bright dipping process some cadmium is removed. Either nitric acid (1% by volume), chromic acid (Weight ratio of chromic acid to sulphate must be kept above 2°.), or a combination of sulphuric acid and hydrogen peroxide (cadalyte bright dip) may be used. For the cadalyte type plating bath the latter is best suited. The chromic acid bright dip is not feasible since it may be the of contamination of other plating and cleaning solutions. However, it has been recently proven that the use of the chromic acid bright dip somewhat increases the protective value of the cadmium plate. When a nitric acid bright dip is used, the cadmium coating often dulls within a short time.

New METAL CLEANING SOLVENT

. . . HAS MANY SUPERIOR FEATURES

On hundreds of jobs of all types, Phillsolv, the new improved *tetrachlorethylene* base solvent has definitely proven its greater efficiency for metal-cleaning and degreasing. There are specific reasons for this: (1) *Higher boiling point* — 249° F. This means more thorough job of degreasing, more penetration of close metal parts, increased range of greases it will remove and absence of corrosive action — because boiling point is higher than water. (2) *Greater specific gravity* — this means flushing effect on work will be more in less time, lower vapor loss, and helps keep vapors below breathing point of operator.

Write for FREE Bulletin

If you have a metal cleaning problem of any kind — or if you want to learn how to do better degreasing, faster, write today for full details and prices on this improved solvent.

PHILLIPS MANUFACTURING COMPANY
3434 W. Touhy Avenue, Chicago, Ill.

Phillsolv

The Perfect Degreasing Solvent

Silver, lead, tin, antimony, and arsenic are detrimental to the cadmium plating solution. Thallium in the anodes may be the cause of dull deposits. Chromic acid in the solution will cause flaky and blistered deposits and may also reduce cathode efficiency to zero. Metallic impurities may be removed by plating steel dummies with a low current density or by the addition of cadmium sponge or zinc dust. The cadmium sponge will precipitate the metallic impurities which are eventually removed by filtration.

For analysis of the constituents of the cadmium solution one may refer to the various pamphlets or text books. The determination of free cyanide is usually accomplished by the titration with .1N of silver nitrate. But due to the following reaction that ordinarily takes place in a cadmium solution

$$Na_2Cd\ (CN)_4 + NH_3 = Cd(NH_2)_4(CN)_2 + 2NaCN,$$

this determination is not accurate, because the silver nitrate also combines with some of the cyanide that is released from the sodium cadmicyanide complex salt. Therefore it is advisable to add NH_3 to the sample in order to release most of the cyanide from the Cd according to the following formula:

$$Na_2Cd\ (CN)_4 + 6NH_4CH = Cd(NH_3)_4(CH)_2 + 2NH_4CN + 4H_2O.$$

By doing so the silver nitrate titration will result in the determination of the total cyanide of the solution.

The cadmium content may be determined by precipitating cadmium sulphide with sodium sulphide. The precipitate is dissolved in diluted hydro-chloric acid and titrated with .1N of iodine solution. A freshly prepared solution of starch is used as an indicator.

$$CdS + 2HCl + I_2 = CdCl_2 + 2HI + S.$$

Weight of cadmium times 1.74 equal combined cyanide.
Total cyanide minus combined cyanide equals free cyanide.

Automatic; semi-automatic, still tanks, and plating barrels are extensively used in cadmium plating. Reversed cleaners are preferred. This eliminates the hydrogen absorption in the metal which may be the cause of blisters.

Defective cadmium work may be stripped in either a solution of ammonium nitrate or muriatic acid with antimony chloride as an inhibitor.

Cadmium should under no circumstances be applied to containers of food or beverage. Many states have enacted laws to that effect. Cadmium and cadmium compounds are extremely poisonous.

DARCO
Bars "Enemy Aliens" from Plating Surfaces

With Darco on guard in your solution, grease, oil, soaps, colloidal impurities and decomposition products can't reach plating surfaces. Darco carbon halts these saboteurs!

Continuous filtration with Darco S-51 catches and *adsorbs* even the unseen, unnoticed traces of impurities that can ruin plating. Periodic filtration may let some of them slip by between treatments.

Many of the country's important plants have proved that 24-hour protection with Darco pays dividends. Even with today's heavy schedules, Darco's continuous filtration gives complete satisfaction. Continuous purification permits much smaller dosages, because impurities are not allowed to build up. Ten cents buys enough to keep 100 gallons of solution clean for a week.

Be sure to specify Darco in the trademarked package.

The article, "Physical Removal of Impurities from Plating Solutions," discusses continuous filtration in detail. Write for a copy.

Darco—Reg. U. S. Pat. Off.

DARCO

This trade-mark identifies the genuine. Accept no packages without it.

DARCO CORPORATION
60 East 42nd Street
New York, N. Y.

Thanks for Everything

TO THE OFFICERS, MEMBERS, AND FRIENDS OF THE A.E.S.

THE National Officers, the Buffalo Branch and the writer all wish to express their appreciation for the excellent turnout (925) and the indulgence, patience and good will you all demonstrated at our 1943 (Victory) Convention in Buffalo. You accepted our welcome and challenge in such volume that our local committees, to say nothing about the Hotel Management, found themselves with their galoshes almost stretched to the limit on numerous occasions. Even Dave Clarin should admit that he was kept in high gear all the time!

To each and everyone, we say—"Thanks for coming, thanks for listening, thanks for everything."

We also wish to thank you ladies for your fine turnout, your good sportsmanship, and your esprit de corps. To Miss Marquardt for her excellent work, we can only say WELL DONE. You certainly have what it takes to run the educational sessions!

And now men and women, let's ALL get behind the Cleveland Branch and give them our loyal support for 1944. If ten men will send in papers before January 1, their convention will be on its way to a new record. Let's beat the *1000* mark by a wide margin in 1944.

Yours for Victory and Success in 1944.

C. J. WERNLUND, *General Chairman* (Emeritus)
Buffalo 1943 Convention Committee

MEAKER EQUIPMENT

for

PLATING

CLEANING

PICKLING

GALVANIZING

(electro-process)

Full Automatics
Semi-Automatics
Copper Oxide Rectifiers
Anodizing Equipment
Motor Generators

When you buy equipment for plating, buy with an eye on quick conversion to peacetime decorative plating with nickel, chrome, copper, brass, etc. Meaker equipment can be changed over to the peacetime job in a jiffy. Fact, many of our customers right now are getting new equipment to hustle that war job, and bustle that peace job, too, as soon as we have finished the Axis.

The Nation's Leading Plating Engineers

The **MEAKER** *Co.*

1635 SOUTH 55TH AVENUE, CHICAGO

Paper Awards

By FRANK K. SAVAGE
Acting Chairman

IN consideration of the papers printed in the *Review* and given at the Convention, the Committee closely adhered to Article 4 of the Paper Awards rules and judged each paper according to the rules therein specified.

The following are the awards which the Committee made. The Herminie Dorothea Proctor award of $100 for the best paper presented during a contest year at the annual convention was awarded to the paper on "Rapid Silver Plating," by R. A. Schaefer and J. B. Mohler. The Founders' Gold Medal for the best paper presented during the contest year at the annual convention by a member of the society was awarded to Frank Mesle for his paper, "A Study of the Adherence and Corrosion Resistance of Silver Plate on Steel." The following papers presented at the convention were given honorable mention: "The Hard Chrome Plating of Cutting Tools" by A. F. Fletcher and "Plating Test Control of Plating Baths" by F. McIntire and R. O. Hull.

The $50 award for the best paper printed during the contest year in the *Monthly Review* was given to the paper on "Reclaiming Nickel from Idle Plating Baths" by W. A. Wesley and E. J. Roehl. The A.E.S. Gold Medal for the best paper printed during the contest year in the *Monthly Review* by a member of the Society was awarded to Walter Pinner for his paper on the "Recovery of Nickel from Obsolete Nickel Plating Solution." The following papers were given honorable mention: "Ceramic Coating of Electrodeposited Silver," by C. C. Helmle, and "Drag In," by Joseph B. Kushner.

There was no branch paper presented at the Convention.

The Committee expressed their gratitude to Dr. Glasstone for his excellent series of articles published the previous year in the *Review*.

Baker
Palladium Plating Solution

War-time restrictions upon plating metals have created a situation where palladium becomes of great importance to the jewelry industry and the time and effort we have devoted to the subject of plating with palladium now enables us to offer an always dependable plating solution.

Baker Palladium Plating Solution is stable and uniform in performance. *It does not decompose during use.* Both heavy and flash deposits can be made from the same solution. A flash plate, which requires no polishing, takes from 15 to 60 seconds.

If you are using some other solution, try some of ours for comparison. You can't lose anything by such an experiment and you may find that your plating troubles have been solved.

BAKER & CO., INC.

113 Astor Street, Newark, N. J.

NEW YORK SAN FRANCISCO CHICAGO

The Second Annual Photographic Exhibit

1943 A.E.S. Convention

By C. C. HELMLE

THE photographic display this year revealed a growing interest on the part of individual exhibitors and visitors. There were 128 pictures submitted by 22 exhibitors; one exhibitor submitted 20 pictures, while another sent in 17 photographs. Branch competition was somewhat disappointing in that only four Branches competed, three of which entered prearranged displays. Manufacturers and suppliers were represented by only three companies, indicating that there is not yet a full realization of the possibilities of this phase of the Exhibit.

The committee on Exhibit Awards consisted of the following:

Mr. T. Slattery	Mr. J. Moneypenny
Mr. H. Kellner	Mr. C. Helmle

The Committee reported the following decisions:

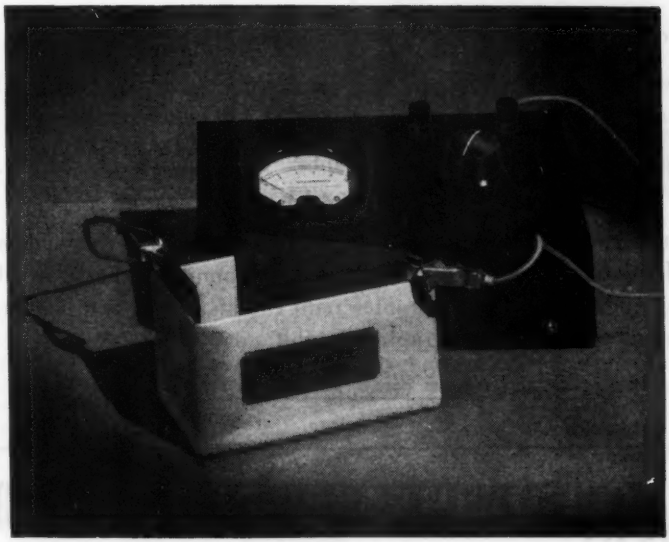
Branch Competition: 1st Place—Bridgeport Branch. 2nd Place—Dayton Branch. 3rd Place—Buffalo Branch. Honorable Mention—Grand Rapids Branch.

Individual Group Competition: Group 1—Manufacturers' and Suppliers' Photographs of Equipment and Processes: 1st Place—Hansom Van-Winkle Munning Co. 2nd Place—Detroit Rex Products Co. 3rd Place—Lea Mfg. Co.

Group II—Photographs of Finishes (parts and production technique): 1st Place—Frank Schladen, M. C. Daniels, Wm. Neill. 2nd Place— A. Boggild, V. Consalvo.

Group III—Human Interest: Ist Place—"Secret Formula", C. M. Douglas. 2nd Place—"Our Daily Bread", K. Schumpelt. 3rd Place—"The First Lesson", M. Thompson.

THE HULL CELL



New small size now available for controlling and developing plating solutions.

★

Write for literature

KOCOUR CO.

4725 S. CHRISTIANA AVENUE, CHICAGO, ILLINOIS

★ ★ ★ HEADQUARTERS FOR TESTING SETS ★ ★ ★

Group IV—Still and Animal Life: 1st Place—"Pussy Willows", W. L. Patton. 2nd Place—"Free Ghost", L. M. McKinley. 3rd Place—"House Plant", M. Thompson.

Group V—Landscapes, Views, Gardens, etc.: 1st Place—"Mountain View", L. M. McKinley. 2nd Place—"Snow Window", W. L. Patton. 3rd Place—"Old Faithful", K. Schumpelt.

Group VI—Hobbies: 1st Place—"Still Life", D. R. Olson.

Group VII—A.E.S. Conventions: 1st Place—Arthur McNeil. 2nd Place—Wm. Hart.

Group VIII—Technical Photographs: 1st Place—W. R. Meyer. 2nd Place—Hanson Van-Winkle Munning Co.

Arrangements for the exhibit and the prize awards were taken care of by Mr. James Moneypenny, Convention Committee Chairman of Exhibits, who deserves considerable credit for his efforts and cooperation in making the 1943 Photographic Exhibit a success.

DEGREASERS or PICKLERS

METAL WASHERS OR QUENCHERS

Whether it's Degreasers or Picklers, Metal Washers or Quenchers which you require for your war work, Blakeslee has a standard or ENGINEERED-FOR-YOU equipment for your problem. Regardless of the size of your production, we have the answer in the proper type of degreasing, washing, quenching or pickling equipment.

The above illustrated machine is a continuous pickle rinse, neutralizer and soaper for 20 mm. cartridge cases, either steel or brass. This machine will take a 2000 pound batch at one load or a continuous supply of cases. We would appreciate the opportunity of working on any problems you have.

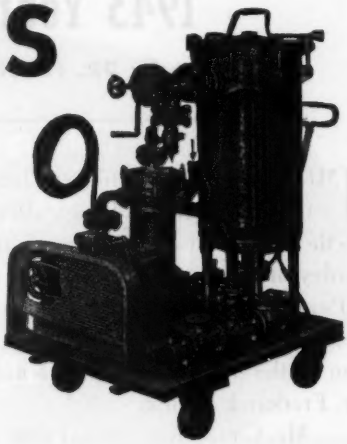
G. S. BLAKESLEE & CO.

NEW YORK CHICAGO TORONTO

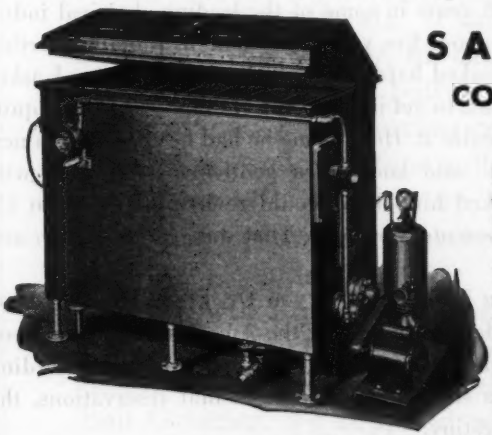
FILTERS

For

BRIGHT NICKEL
NICKEL
CHROME
COPPER SULPHATE
CYANIDE COPPER
BRASS AND ZINC
CADMIUM
HIGH SPEED COPPER
BRITE ZINC
SILVER
ELECTROCOLOR
AND OTHERS



INDUSTRIAL FILTERS will do a fine job of filtering and purifying your plating solutions, at the lowest possible cost per filtered gallon.
INDUSTRIAL FILTERS have larger filter areas, more sludge holding capacity and higher pressure pumps, which insures high flow rates and longer filter cycles.
The "LEAK-PROOF", "CORROSION-PROOF" and non-contaminating construction of Industrial Filters is a vital requisite of Electroplating filters.



SALT SPRAY
CORROSION TEST EQUIPMENT

For testing—Electroplated or coated metals at 95 deg. Fah. in accordance with Army, Navy and Aeronautical specifications, as outlined in Bulletin AN-QQ-S-91-5 dated Dec. 1938. Also for controlled temperatures at any degree. Testing Cabinets lined throughout with rubber. Made in 4 sizes.

"Write for NEW Literature and particulars"

INDUSTRIAL FILTER & PUMP MFG. CO.

1621-25 WEST CARROLL AVENUE CHICAGO, ILLINOIS

1943 Year of Destiny

By DR. FREDERICK A. HODGE

THE luncheon-meeting was held in the Terrace Room of the Hotel Statler, Buffalo, and was called to order immediately after luncheon by the President of the American Electroplaters' Society, Charles C. Conley of Sidney, Ohio.

PRESIDENT CONLEY: Gentlemen of the American Electroplaters' Society: My first pleasant duty this afternoon is to introduce to you the man of the hour, the man who made this delightful luncheon possible, Mr. Frederick Gumm.

. . . Mr. Gumm was greeted with enthusiastic applause by the members in attendance.

MR. GUMM: Gentlemen, I do hope you all enjoyed the luncheon. I am not going to make a speech because we have two main speakers following me.

PRESIDENT CONLEY: It is now my pleasure to introduce to you the first speaker of the afternoon, a gentleman who came from the University of Virginia, who spent 18 years in some of the leading chemical industries of the country, and about five years ago came to Buffalo to retire. Since that time he has worked harder than he ever has before. I asked Dr. Hodge how he happened to get into radio work and I think it is quite interesting to hear how he did it. He tells me he had been reading a new edition of "Mein Kampf" and knowing a gentleman associated with WGN, this gentleman asked him if he would review this book in 15-minute periods and he consented to do so. That was five years ago and he is still on WGN.

I take great pleasure in introducing to you Dr. Frederick A. Hodge.

DR. HODGE: Mr. President, members of the American Electroplaters' Society: When your Committee approached me early this year regarding this address, I chose as a subject, with some mental reservations, the subject "1943, Year of Destiny."

As I say, I had some mental reservations at that time, because things did not look too good, but I think the course of events since that time has justified the subject. Now, if I appear to you to be an incorrigible optimist today, it is probably because I am one.

For Fast, Economical, Grinding, Polishing, Or Sharpening —Get the LASALCO CUSHIONED BELT GRINDER

Here's a real all-purpose grinding and polishing machine that will grind and polish iron, brass, aluminum, bakelite, horn, and many other materials. It can be used to sharpen drills, knives, or any edged tool.

An abrasive faced belt runs over a rubber surfaced ball bearing pulley and the work is polished on this pulley. There are no wheels to buy, to set up, or turn down. The belts are low in cost and easily changed in a few seconds.

Don't waste time with files and sandpaper — and don't hold up expensive production machines — get a Lasalco Cushioned Belt Grinder. It's supplied with a stand or for bench mounting.

LASALCO, INC.

2818-38 LaSalle Street, St. Louis, Missouri

In any given statement or set of facts, I find it is possible to interpret them in two different ways – at least, I think an old Greek philosopher said that, but I do not remember who he was . . .! Anyway, you can take the same set of facts regarding the President or Congress and you let one side interpret them and he will be the worst man and it will be the worst Congress, the biggest set of dumbheads that ever was, and you go to another man that looks at it from another point of view, with the same facts, and he will think that the President is a man sent from God and the Congress if not quite of the same order, at least they are on the way!

I choose to interpret certain facts regarding this year of destiny in an optimistic manner. I think I am right. I believe the facts warrant it. In the first place, let me say that destiny is a very peculiar term. It is something that is related in most of our minds, with irrevocable factors in life, with the factors that we have nothing to do with.

I think that is a wrong impression of destiny. While there may be some irrevocable factors in destiny, most of the factors that control our destinies are in our own hands and make it. It was Adolph Hitler early in this war, who said that the way this war terminated would decide the history of Europe for 1,000 years. I sincerely hope he is right, although I don't think it is going to terminate in the way that he thought at that time.

If we look a the progress of human events today, we can see a great change in them over what they appeared to us even a few months ago and so I shall consider human destiny or the destiny of the world and this particular year as the turning point in that destiny, from two, three different viewpoints.

In the first place, take it from the military standpoint. There is no question in my mind whatever of the great military spirit of the Allies at this time. This matter of production for victory, you know, is a matter that is sort of like a snowball . . . begins very small, starts to roll in very easily and very slowly, but it gradually gets bigger and when it gets to a certain size, it is simply remarkable how fast from then on it does grow. Your production is just beginning to show in the results of the war. That is why those results are changing so rapidly.

Just a few months ago there were many people in this country who talked about the war lasting three, four, five, six years, failing to see that a war of these proportions could not last that long, otherwise all of the countries of the world would be economically bankrupt. I do not

Synergism HELPS WIN AN IMPORTANT MILITARY OBJECTIVE

SYNERGISM—meaning forces working together to produce results far greater than both working separately might achieve—has helped win an important military objective. This is the finish so important to the new steel cartridge cases, replacing critical brass.

Leading metals manufacturers were given the job of producing steel cartridge cases which involve a whole new set of manufacturing problems, from drawing the case to finishing it. They called in Zapon, who knew little of cartridge case fabrication from steel, but has a broad background of metal finishing.

Zapon technicians and the manufacturer's men sat down together and studied the problem. The finish must protect inside and outside, against the charge, abrasion, weather all over the world, and other factors. A finishing procedure to fit into the production line was needed.

Formulas were studied. Constant discussions were held. The result was a Zapon steel cartridge case finish exceeding in several respects the Army's rigid requirements. Likewise it was fitted to fast manufacturing methods. Today carload after carload of Zapon finished cases moves to the fronts.

Thus did synergism help solve an important problem and solve it fast because it went far beyond mere co-operation. Our men became partners with the manufacturer's men and each gave the other ideas that might not have been born through co-operation only. Thus does synergism crack new industrial frontiers. Let's talk it over.

ZAPON

ZAPON DIVISION · ATLAS POWDER COMPANY

Eastern Sales: Stamford, Conn. Western Sales: North Chicago, Ill.

INDUSTRIAL FINISHES

mean bankrupt in money, although perhaps we don't know that we are that now, but by economically bankrupt, I mean that we shall have used up so much of the essential materials, or let us put it in another way, that the essential materials of war shall have gravitated by that time to one side or the other, so that it is the Axis or the Allies must in a much shorter period than that control the economic destinies of war and whenever that condition came about, certainly the war would be very close to its end.

A number of years ago, before the beginning of the war, Adolph Hitler made some very peculiar decisions. We have talked a lot about the mistakes of the Allies, the mistakes of the British, etc., and our own mistakes, but there is one man in the world who has made more mistakes than all the others put together — that is, as a military leader, and that is Hitler.

One of his early mistakes was 'way back in the years before the war, when he was preparing for it, he called in his engineers and he said, "I want you to go out and make a survey of the German transportation system, and I want you to see how many men we can handle, and in how short a time, etc., over the railroads of Germany, and in fact, Western Europe."

I don't know whether he included Eastern Europe in it or not, but anyway, the survey was made and they came back and gave him the figures and the figures showed that he could not begin to handle anything like the immense size of an army that he had contemplated on the railroads and so Hitler, being a bright, leading, up-to-date thinker, said, "Well, anyway, the railroads are done for in this age of gasoline and motor transportation — they are finished, so we will just simply forget the railways and we will go ahead . . ." and they went ahead and built a couple thousand miles of very fine highways throughout Germany that would lead them to all of the essential fronts which they wanted to go to.

Then they took their locomotive manufacturers, their rolling stock manufacturers, and turned them all into the manufacture of trucks and motor transportation, let the railroads run down . . . they thought they would never have any use for them anymore. They manufactured millions of these trucks. Our Ambassador to Belgium, Mr. Cudahy, said that when the Nazis invaded Belgium, he went out to a certain street corner in Brussels where they were passing and there was a continuous line of these big motor trucks passing that corner, about 40 miles an hour, just as close as they could run safely to one another, and he said for three

QUICK FACTS ABOUT *United Chromium*

that may help you solve today's plating problems

NITED CHROMIUM'S more han 15 years' experience in elec-olytic processes has been ap-lied to the very problems that rise in utilizing these finishes or the war effort. Every day we e assisting hundreds of impor-nt war contractors on applica-ons that involve the use of such perations as: cleaning and prep-ration for plating, solution ontrol, plating cycles, racking chniques, stopping-off, strip-ing and other exacting proce-ures. Through our engineering cilities and staff of field en-neers, United Chromium makes is "know-how" readily avail-ble to platers and manufacturers ho can utilize it in the produc-on of vital war materials.

FACILITATING CONVERSION

he advice and supervisory assistance f our field engineers has been espe-ally valuable in assisting licensees make the necessary changes in plat-g methods and procedures which ew priorities or restrictions demand.

MEETING SPECIFICATIONS

serving hundreds of licensees, we ave had wide experience in how to train platers to the strict operating cycles and plating techniques required for work to precision standards.

● CONSERVING MATERIALS

United Chromium has developed many processes, production materials and techniques that save time and avoid waste of valuable metals and solutions.

● SUB-CONTRACTING WORK

We are prepared to recommend companies who through experience, equipment, personnel and the supervisory counsel of U. C. Engineers, are ideally suited to handle your type of work.

● SOLVING TOOL SHORTAGES

The facilities of our chromium plating licensees are enlisted today in the battle against wear and corrosion—making it possible to extend the life of a wide variety of parts and tools—and to reclaim them when worn or machined off-size. We have prepared a helpful booklet, "The Last Thousandth of an Inch", describing these applications in detail. In writing for a copy, please mention the Monthly Bulletin of A. E. S.

UNITED CHROMIUM

INCORPORATED

51 East 42nd Street, New York, N. Y.

Waterbury, Conn. ☆ Detroit, Mich.

THESE U. C. PROCESSES AND PRODUCTS ARE *AT YOUR SERVICE*

CHROMIUM PLATING is widely used to extend the life of equipment parts and machine tools as well as to salvage worn or rejected parts and tools.

UNICHROME* ALKALINE COPPER PLATING PROCESS makes possible ductile, fine-grained deposits which are utilized wherever they are found to be essential.

UNICHROME* ALKALINE STRIPPING BATH meets the problem of removing metals such as copper, chromium, cadmium and zinc from steel. Exceedingly fast — the bath is a mildly alkaline, non-toxic solution that does *not* etch the steel base metal.

UNITED CHROMIUM PROCESS FOR ANODIC TREATMENT OF ZINC PLATED STEEL and zinc based die castings, giving greatly increased corrosion resistance, is now available.

★

UNICHROME* "AIR-DRY" RACK COATING—A coating material for insulating plating racks used in all types of plating and anodizing solutions.

UNICHROME* "QUICK DRY" STOP-OFF LACQUER 322 — An adherent, very fast drying lacquer used in cyanide copper, chromium and other plating solutions.

UNICHROME* "QUICK DRY" STOP-OFF LACQUER 323—A tough, very fast drying lacquer used in chromium and other plating solutions as well as Parkerizing solutions. Can be peeled off after it has served its purpose.

UNICHROME* RESIST LACQUER BG — A chemically resistant lacquer used principally as a stop-off in hard chromium plating and Parkerizing operations. Can be peeled off after it has served its purpose.

UCILON*—An air-drying, corrosion-resisting coating material for protecting metal, wood, concrete and other surfaces against the action of both acids and alkalies, as well as water, gasoline, oil and various corrosive chemicals.

UNICHROME* STOP-OFF COMPOUND 311—A solid, wax-like formulation which is melted and applied as a hot liquid for stop-off purposes in chromium and other plating operations.

UNICHROME* RESIST SHEET AND ROD—A solid insulating material used in constructing composite plating racks, stop-off shields, and lattices for preventing short circuits in anodizing tanks.

**Trade Mark Reg. U. S. Pat. Off.*

whole days, night and day, this steady stream of trucks was passing at one place.

Well, unquestionably the war on the Western front was won by the wonderful system of transportation that the Germans had built, but one thing that Adolph Hitler did not figure on was that he might come to a point where he might want to carry his invasions further, where the roads would not be so good, where it would take more transportation and more men to run them, where it would need larger armies and he came to that point when he entered into Russia.

In the meantime, his transportation system has been giving out absolutely in Germany. I want to call your attention to one fact, that only last December Hitler sent out the order that locomotives and rolling stock for the railways was to have priority over even airplanes and of course, now, well, he hasn't got the airplanes, so it is a question of which road to take. The transportation system of Germany is one of its great weaknesses, as you will recognize by the fact that the Allies are all the time pounding these transportation lines, transportation centers, even shooting up railway engines as they are running along the track . . . they like best to shoot them just as they are entering a tunnel!

That is a weakness that is not only going to punish but have a great part in the defeat of Germany. It is hard to imagine, but a year and one-half ago, that is, in the fall of 1941, Germany was for three weeks — I should say Berlin — without a potato and if any of you know anything about Berlin, you know what kind of a hardship that would be. (Well, we have been . . . I won't say anything about that!) (laughter)

Anyway, we are not quite as much addicted to the potato as the Germans are, but the whole trouble in Germany was the breakdown of the transportation system, and an early freeze that came that would not allow them to ship potatoes because of the freezing enroute.

That is only a little incident that may call your attention to another military factor and that is the factor of oil and gas. We don't know exactly how much oil and gas the Germans are able to produce. They have only one oil field, a very small one, in Roumania . . . I say one, there are really three, but that is only one source of oil. Those oil fields in Roumania have been going down for years . . . in fact, back as far as 1936, 1938, I think in two years they lost about one-third of their production. Their production cannot be high, but at any rate, whatever it may be, there is a great deal of evidence that Hitler is very hard-pressed for gas and oil. I don't mean to say that they are

Pentrate*

PHYTANIUM - BLENDED

The MODERN BLACK FINISH for STEEL

Around the world — on every front — steel products of war are finished with Pentrate. Many types of weapons, steel propeller blades, engine parts, precision instruments and a multitude of other items have this protective Pentrating finish.

Designers and engineers with an eye to post war products have included Pentrate in the plans for the future.

Pentrate gives a deep black durable rust resistant finish to steel. There is an actual penetration with positively no size change. Bearing manufacturers have found the friction reducing quality of Pentrated surfaces advantageous.

Send for Pentrate catalog

HEATBATH Corporation
SPRINGFIELD, MASSACHUSETTS

scraping the bottom of the barrel over there — that is a foolish expression — but simply that any nation like Germany will carry a large reserve of oil in case they are invaded, in case of absolute necessity and they won't touch that reserve as long as they are not inside the borders of Germany, but outside of that reserve, they are apparently using their reserve just as fast as they can use it.

It was the absence of fuel and airplanes that accounted for Rommel's retreat in Italy, the absence of fuel that has kept the Italian Navy tied to its bases . . . at least, it is a good excuse, because as a matter of fact, there has never been a day when the Italian Navy did not exceed both in tonnage and numbers, the British Navy in the Mediterranean, yet they never have been willing to come out and meet them. They say it is oil . . . well, we will take it that way. Now that the end approaches, they will find enough oil to get out of their berths.

But you can take the German Luftwaffe, everybody in Europe has noticed how the German Luftwaffe is much weaker than it has ever been before. The Russians, only in May, shot down or destroyed 2,068 I think it was, to be exact, over 2,000 German planes and in the same month over 2,000 German planes were destroyed in Tunisia; that is a total of over 4,000. Germany is not making over 1400 to 1500 fighter planes a month at best, so you can see their production of fighter planes is much less than the destruction of them, but aside from that, in all the fronts, in Russia, Tunisia, there has been noticed a lack of ability in the German pilots and that is due or believed to be due to the fact that there isn't enough oil and gas in Germany to give their pilots proper training. The training time has been cut down immeasurably from what it used to be and consequently the young men who go out as pilots in the planes are not fully prepared, they have not had the experience, the numbers of hours in the air . . . These are all some of the factors that will contribute.

I talked today on the air—maybe some of you heard me, but at any rate, I will just repeat one fact about the matter of sulphur and the manufacture of explosives. All of you men in the electroplating industry know a great deal about sulphuric acid, you know that it is very essential in the process of nitration as used in explosive factories; perhaps you don't know, however, that German sulphur comes from Italy and two-thirds of their entire supply comes from the land of Sicily, so we are going to take that Island and the other third of German's supply comes from Northeastern Italy and if we should take northeastern Italy as well as Italy, then German supplies of sulphur would be practically finished.

MULTI-PLATER

GREEN MULTI-PLATER MODEL 86

ALL IN ONE CABINET —

the MULTI-PLATER provides eight (8) separate selenium rectifier sections each having an output capacity of 6 volts 500 amperes.

For quick, simple installation and mobility, MULTI-PLATERS are mounted on casters.

Separate output terminals make it possible to connect each rectifier section to a separate tank, or several sections may be added together for higher voltage or greater current capacity, or *all* the sections may be grouped together in a single bank.

When sections are used individually, or in groups, there are *several hundred* possible combinations; for example: If all eight sections are interconnected any one of the following outputs may be obtained:

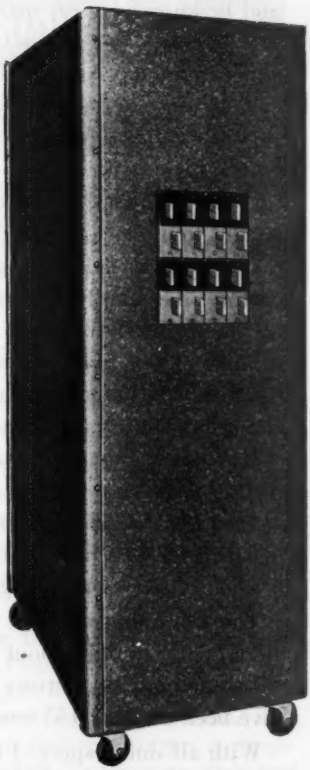
6 volts 4000 amperes,
or 12 volts 2000 amperes,
or 24 volts 1000 amperes,
or 48 volts 500 amperes.

Standard MULTI-PLATERS provide internal connections for operation from 220, or 440 volt 60 cycle 3 phase supply.

MULTI-PLATERS can be furnished for other supply voltages.

MULTI-PLATERS of lesser capacity than Model 86, as illustrated, are also available.

Write Dept. R for illustrated booklet.



42" wide, 24" deep, approx. 81" high.

W. GREEN ELECTRIC CO., INC.

ESTABLISHED 1892

Builders of SELECTRO-PLATERS and all types of rectifier equipments.

Green Exchange Bldg. 130 Cedar St., New York

They can manufacture a little from the Pyrenees, perhaps get a little from Spain, but it will be practically finished except for the stockpiles.

All of these factors you can add together and you can see what they mean in the question of a victory over Germany, not in 1944, or 1945, or 1946, but this year! (Applause)

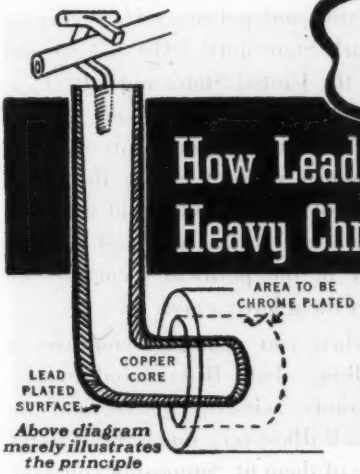
I was talking with a young man in our air service just the other day, a man who is in an important confidential position, who tells me that and he knows a great many of the generals in the Army (you don't get this, I know . . . I won't let it go out, of course) and he says of the generals in the Army today that the most pessimistic of them put the end of the war in Europe at Christmas. Now, take it or leave it, just as you want to. (Applause.) Personally, I think it will come, some of it, before that time.

Now, 1943 as the year of destiny, calls up a great many other things. In the first place, there are political eventualities coming out of this fact of what we called back in 1846 (it was originated then) our manifest destiny, the manifest destiny of the United States, the manifest destiny of the world. What does it mean? We are going to make the greatest mistake of our lives, the second greatest, because we already have made the first one, the greatest mistake of our lives if after this war we think about our destiny as being wrapped up in the fact of universal democracies. We made that mistake after the last war. We said, "The only thing that is necessary to stop wars forever will be to make these warlike democracies," and we went in and made Germany a democracy. That was just a little interlude in the progress of Germany; they soon outgrew it when Hitler came along.

The Germans were not ready for democracy. Prior to the last war, there had been only about one in 20 years that had a vote. Democracy is not something that grows up like a mushroom; it is an oak tree. We have been at it for 155 years and we have not got very far yet.

With all due respect—I think we have the most wonderful democracy in the world, but we still have so far to go that we cannot even see the horizon at the end of the rainbow. If you go out making countries democracies, these countries that are not ready for democracy, the captive countries, if you wish to call them so, or the satellite countries of the Axis, you are going to fail, miserably fail and we will have another war on our hands within a quarter of a century, at least.

You cannot immediately inject men into the democratic idea. It has taken us a long time to get as far as we have gotten. Here in our first



Above diagram merely illustrates the principle

This is a War-Fact Ad
It is designed to give plain usable data in simplified form to save time

How Lead Plating is Solving a Heavy Chrome Plating Problem

Here are a Few Other Wartime uses for Lead Plating:

Adapters and linings of gas shells
Pipes and pipe fittings in contact with corrosive vapors and liquids
Gas mask parts
Coil springs
Aircraft engine bearings and parts
Marine and Naval equipment
Cables, channel irons
Screws, bolts, nails
On all metals where the lubricating, vibration-dampening or corrosion-resisting properties of lead may be used.

A new 8-page booklet on Lead Plating with Harshaw Lead Fluoborate Solution Concentrate has just come off the press. It describes everything from solution preparation to solution analysis. Write for your copy . . . a post card will do.

Another Important use for Harshaw Lead Fluoborate Solution

THE PROBLEM: When laying down a heavy deposit of chrome, a plater found it difficult to control current distribution, especially where hard-to-reach places had to be plated evenly. The relatively high resistance of solid lead anodes resulted in deposits being excessively thick on some areas, and too thin on others. Anodes made in special shapes were found not to be the complete answer.

THE ANSWER: By using lead coated copper, current could be "aimed" with greater precision. Hot dip lead coatings on the copper were not satisfactory. They were too thin, too porous, and pitted too quickly.

Lead plating the copper anodes in Harshaw Lead Fluoborate Solution was the answer. It gave a dense, easily-controlled lead surface of uniform thickness. And when pitting occurred, it was a simple matter to replate. Furthermore, these lead plated copper anodes were lighter, smaller in cross section, and carried the required current where it was needed.

★

THE HARSHAW CHEMICAL CO.
1945 E. 97th Street, Cleveland, Ohio
BRANCHES IN PRINCIPAL CITIES

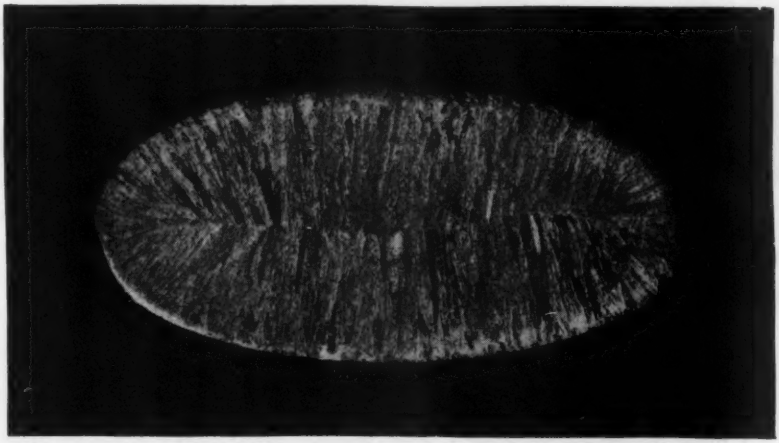
constitution in New York State we would not let a preacher or priest vote, we were so afraid of letting religion and politics mix. We never had full manhood suffrage in New York State until 1940 and we did not get complete suffrage anywhere in the United States until 1921, as you all know; although we had fought the Revolutionary War—not we, but our forefathers, on the principle that taxation without representation is unjust, we continued to tax our women without giving them any chance for representation—we had a sort of Hitlerite idea, but we stuck to it and finally we got our eyes open after the last war and decided that women could be of some benefit in the political scene, so we gingerly pulled the curtain aside and let them have a peek in.

How are you going to come out when you make all countries a democracy? I hear a lot of people talking about Britain and India—Britain ought to give India what it wants, self-government, and we ought to use our influence . . . I like Mr. Willkie very much, but I don't like some of his ideas; I don't think some of them fit. Supposing you gave India her wish for self-government—it would not be six months before you would have a dictatorship in India.

In the first place, there are about three million members of the Indian National Congress . . . that is a highsounding name, but it is just a political party, like the Democratic or the Republican party here . . . it is only a political party of about three million members out of 350 or 600 million Hindus and when you let a small body like that speak for the whole people, that is not a democracy, it is not self-government and it could not be.

Eighty-seven per cent of the people in India are illiterate; why, there are millions of people back in Central India that never heard of Mr. Ghandi. One of the correspondents, I believe it was Herbert Matthews, was traveling in India and he went 'way out in the center of India and he had his interpreters with him . . . He got to a little village and he said to his interpreters, "You go out here and ask all these people what they know of Mr. Ghandi," and out of the whole village, they found one man who thought he had heard of him, yet Mr. Ghandi and others want to speak for India. It is not democracy at all, you cannot have democracy that way.

Under present conditions, I would say it would be absolutely impossible to establish anything like self-government in India. I think our experience in the Philippines was a wonderful experience and we showed the world something. We gave the Philippines a sort of period of pro-



More than an "Ounce" of Prevention

Loose nickel in high acid or low pH baths is caused by the attack of the acid on the bonding material, thus isolating the nickel grains before they have time to dissolve.

In Seymour "Seycast" 99%+ Pure Cast Nickel Anodes, loose nickel is reduced to a minimum by extra long, slender grains anchored spoke-like to a common center. (See unretouched illustration above.) As the acid can penetrate but a slight distance between boundaries, the grains tend to remain solidly in place during the entire process of corrosion. "Seycast" is just one of many kinds and types of anodes evolved in the Seymour plant.

SEYMOUR

"SEYCAST"

NICKEL ANODES

THE SEYMOUR MANUFACTURING CO., SEYMOUR, CONN.

bation, we let them sort of get used to the idea of running governmental affairs by letting them have a parliament to direct them, and have leaders chosen; we did keep our man there as a sort of governor-general to look after things, but everything worked pretty smoothly, on the whole . . . we really did a wonderful work in the Philippines.

But you talk about democracy . . . what would we be doing today if Russia had been a democracy? I am telling you that if Russia had been a democracy, there would not be any Russia today. It was one of the blessings that Russia was under a dictator—a benign, well-balanced dictactor . . . we didn't think so, once, but we are willing to concede that now . . . at least, a man who could see in the future and knew what was coming and be prepared for it.

Democracies don't prepare for war and it was a blessing that Russia was not a democracy.

I must hasten on because I have another point that I want to make and that is in education. After this war, what are we going to do about the educational phases? We cannot keep on letting Germany, for instance, bring up her youth in a military system, letting Japan do the same thing. There has to be a lot done with the educational system. A good many years ago, before the last war, in fact, a friend of mine in the University with which I was connected in Virginia, spent a year over in Germany, studying the educational system. When he came back, we used to sit for many hours talking about what he had seen over there.

I said to him, "John, tell me the most amazing thing you ever saw in school in Germany."

He thought for a moment and said, "It was this: the most amazing thing I ever saw was that I never, except on one occasion, heard a German child ask the teacher a question and I don't believe that boy ever will again."

Now, that is the trouble, it is the fundamental trouble with the German system of education—the teacher tells you what to do, he tells you the answers. The German educational system, the Japanese educational system, and the Italian educational system are all built on the principle of teaching the child what to think and not teaching him how to think, and you will never have any peace in this world until the people of these warmongering nations, until the children, are brought up in ways of thinking for themselves, not simply in parrot-like mumbling the answers that are given to them.

Why, the German Auxiliary—I don't know what they call it, a sort of

U. S. NAVY OFFICIAL PHOTO

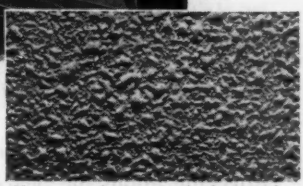
New! PEBBLE-TEX

Affords Protection to Metal Surfaces of Important War Products. . .

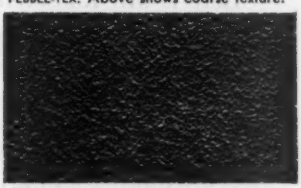
Such as radio sets, instrument panels, fire control and listening devices, etc., requiring a rough finish. Also recommended to manufacturers of essential civilian articles who can furnish high priority and allowable end-use. PEBBLE-TEX offers you these outstanding advantages:

1. **Air-drying at 20 minutes. Saves time, manpower and oven space.**
2. **Simple to apply with pressure type spray gun. Varying degrees of texture obtainable from same mix by gun adjustment.**
3. **PEBBLE-TEX pattern in one coat. For full metal protection use over a primer.**
4. **Comes in a variety of colors.**

Investigate PEBBLE-TEX. Trial order at drum price. Write to Dept. MR



Here are shown actual photographs (unretouched) of panels finished with PEBBLE-TEX. Above shows coarse texture.



This panel shows a finer texture. The size of the pattern is regulated by spray gun adjustment and application technique.

THE EGYPTIAN LACQUER MANUFACTURING CO.
ROCKEFELLER CENTER—NEW YORK, N. Y.

EGYPTIAN
Superior FINISHES

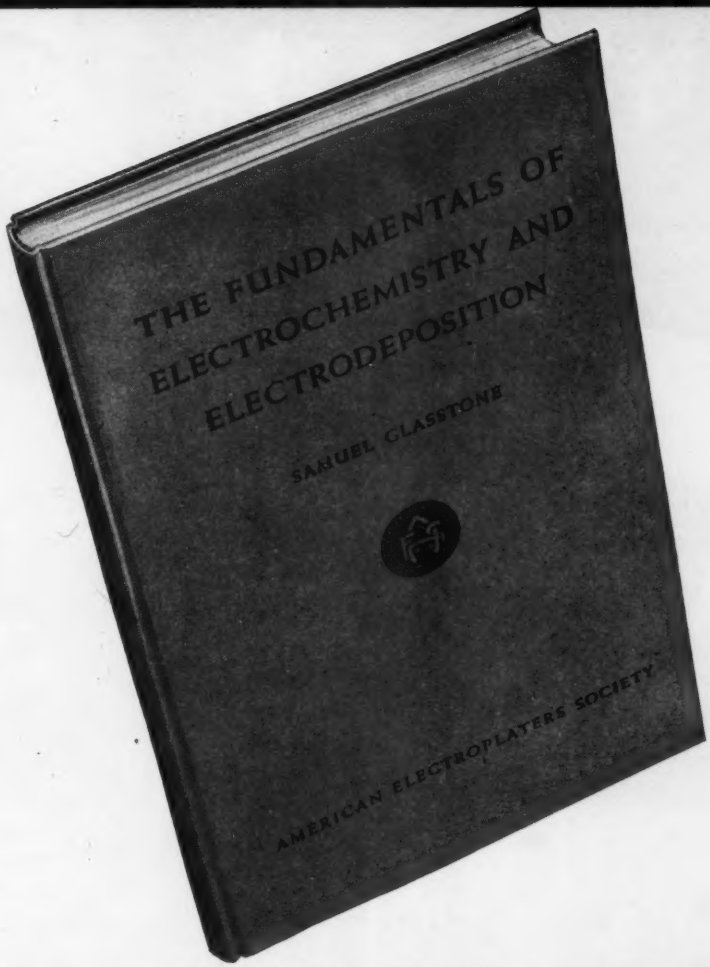
women's auxiliary to the Nazi Party, go around to all the homes in the community, and when they see a little child of three or four years who doesn't give the Nazi salute and "Heil Hitler!", they say, "Here, you are not raising this child right, we will have to take him out of this home and put him in an institution where he will be raised and taught to do the proper things."

He must answer certain questions, he doesn't know anything about the meaning of them, but he is taught the question and he is taught the answer and he is taken out of the home and put into an institution if his parents don't teach it to him right. When he gets to be 12 years old, he joins the Hitler Youth Movement, he goes out with a pack on his back, he must march so many miles a day; when he is 13, they put an extra brick into the pack; when he is 14, another and by the time he is 18, he is able to take the regular march of the German soldiers carrying the regular weight of pack. It is a military education—he is not supposed to do any thinking, he is not supposed to know the answers to the questions . . . something like we do in our schools here in New York State when we spend most of the year teaching the children how to answer the next regents' examination . . .!

Now, my friends, let me say that we have a tremendous work before us . . . I don't know the answer to it, nobody knows entirely. We have one wonderful thing, and that is when it comes to the peace, I am not worrying about the peace, because I thought I analyzed it in this way:

Here is Mr. Roosevelt, he is a great idealist; behind him is a very realistic country . . . I say that in all kindness . . . I mean our realism is of the industrial and commercial type, so we have Roosevelt, an idealist; America, a realistic country. Then we have Stalin, who is essentially a realist, with an idealistic country behind him, and we have Churchill who is an internationalist, with the strongest nationalist government in the world behind him, and if those three cannot find out the answer, then it is hopeless! (Applause)

CONTROL YOUR PLATING SOLUTIONS
KOCOUR TEST SETS
KOCOUR CO. • 4725 S. CHRISTIANA AVE. • CHICAGO



INDISPENSABLE TO *Practical* ELECTROPLATERS

A.E.S. announces publication of "The Fundamentals of Electrochemistry and Electrodeposition" . . . by Samuel Glasstone!

With this announcement, A.E.S. initiates another new, needed, vitally important service. This – and similar manuals to follow – condense into compact, practical handbook form – the authentic essentials of the science of electroplating. Dr. Glasstone's book is a compilation of the much-discussed series of articles which appeared, during the past year, in the *Monthly Review*. But the material has been completely revised in the light of latest war-time developments . . . to provide practical, daily usefulness to schools, colleges, and every serious electroplater!

Handsomely printed, richly case-bound, over 100 pages $5\frac{1}{4}$x$8\frac{1}{4}$ and priced at only $2.00 per copy, as an educational feature of A.E.S.

Send check or money order to National Headquarters.

AMERICAN ELECTROPLATERS SOCIETY

545 Fifth Avenue, New York, N. Y.

Getting Personal

By THE ROVING REPORTER

We would suggest that in the future, Ed Anderson consult with Joe Ruff for the proper name of his processes. We agree with Joe Ruff that the name Chronic has certain advantages over Cronak.

• •

We want to congratulate Chris Wernlund on his energy and particularly his unique method of making his announcements. "Will so and so please report to the refrigeration desk."

• •

The business session went off without a single argument, and everything was agreeable to all. This could either be due to the chairman or due to previous preparation. We wonder which?

• •

It seemed good to see George Hogaboom on the speaker's platform talking of men he had known for a period of years, but we would like to see him back giving technical papers.

• •

Another old timer seen after a lapse was Walter Barrows of Toronto.

• •

If we only had more accomplished speakers like John Feeley to present a motion, there might be less misunderstandings and less complications in business sessions. We wonder if John's talents come from plating or outside activities.

• •

The most worried man at the Convention was the Maitre d'Hotel who was always asking the question, "How many more do we have to feed?" The Hotel Statler did well, but they lost considerable sleep worrying.

• •

How many people went to Chez Ami for an evening of seclusion only to find many other members there to check up on them.

• •

The next time H-V W-M presents glass prizes, we would suggest that they fix it for the ladies to win the draw so that they will take better care of the prizes. Broken glassware is not a good thing to take home.

• •

We wonder if the Royal Canadian Air Force Officer who joined the party late Wednesday night got back on duty on time. It was doubtful that he had any voice left from the amount of singing he was doing at 1:00 A. M.

• •

It is suggested that all future speakers study Mr. Van der Horst's cigar technique. It is one sure way of holding the interest of the audience.

Charles Conley should read the little green book to find out that the proper election of officers requires a ballot to be cast. George Wagner almost became an officer by proxy and not by ballot.

• •

A new volunteer microphone engineer was found to help out the hotel and other amateurs. He now has a permanent job.

• •

If Mayor Lou Hague had called for a round of "booze" instead of a round of "boos" we might have suspected a campaign speech.

• •

Mr. Handy did a Handy job with the Hanson-Van Winkle-Munning Convention News.

• •

George Wagner should confide more in his wife and he would not miss out on free breakfasts.

• •

On the jaunt to Chez Ami, Chick Helmle got lost and the Business Manager had several swell dances with the Mrs.

• •

I still don't get the point of point of Chris Wernlund's joke.

• •

Did anyone have more fun than Bill Hart?

• •

Charlie Logan's talents are not confined to plating. He has a couple of daughters that Powers would welcome on his staff of pulchritudes.

• •

Does four time gold medal winner Walter Pinner know there is a metal shortage?

• •

Tony Sarg never got more action out of his marionettes than Dave Clarin with his gadget!

• •

Fred Gumm probably read somewhere the longer the spoke the greater the tire.

• •

Someone pulled a snide trick at the Fellowship Dance and brought in a pitcher of water.

• •

Hope the traveling bag presented to Tom Trumbour is a good one so it will last until it can be used.

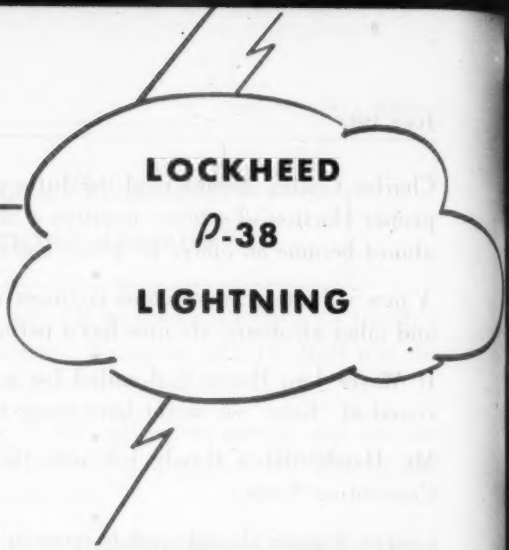
• •

If Ford Motor Co, knew Ellsworth Candee's knack with a Model T engine they would make him an offer. He will not, however, qualify as a fisherman.

• •

Why not offer a prize for the best dancer at the banquet? Some of our National Officers cut a mean rug.

Continued on Page 677



LEA

METHODS *and* MATERIALS

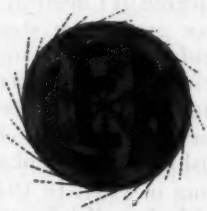
for BURRING, POLISHING and BUFFING, *have a hand in thro*

Aptly termed "a sword on two bullets", the Lockheed P-38 is doing a swell job for us on all the battlefronts. She's fast, hard-hitting, high-flying, well-protected, versatile. She's a ship the Air Force can be – and is – proud of!

To get a ship like the P-38 off the assembly line is a real job calling for the best in engineering and manufacturing skill. With thousands of parts being prepared and assembled, precision and close tolerances are controlling factors. Countless burring, polishing and buffing operations have to be carefully planned and carried out.

...roduction of this Fast Fighter

That LEA Methods and LEA Materials were selected for many of these operations is, we like to feel, a recognition of our knowledge of and experience with such problems. We are serving many, many war industries in a similar capacity.



THE LEA MANUFACTURING CO.

Waterbury 86, Conn.

Burring, Buffing and Polishing . . . Specialists in the Development of Production Methods and Compositions

7-LM-6

National Officers

GEORGE J. WAGNER
President

I started my Plating career in 1911 at the age of 16 and learned the hard way. I worked as an apprentice for Cook and Hayes, a small concern. Cook and Hayes moved to Newark in 1913, and I moved with it. Later on an affiliation was made with the Standard Metal Manufacturing Company. I worked myself up to a foreman's job in 1917, and in 1918 started my own business, known as the Hy-Grade Electro-Plating Company. I have operated successfully under this name for the past twenty-five years.

In 1922 I joined the American Electro-Platers Society. I attended the Chemistry class which was conducted by the Newark Branch from 1926 to 1929. In 1928 I was elected President of the Newark Branch, and in 1935 I was elected Secretary-Treasurer of the Newark Branch, which position I still hold.

CLARENCE C. HELMLE
2nd Vice-President

Born in Philadelphia, Pa., May 11, 1910. Attended elementary and secondary schools in Bridgeport, Conn. Graduated Rensselaer Polytechnic Institute 1932 with degree of Chemical Engineer.

After graduation started working in the Bridgeport Laboratory of the General Electric Company. Spent first year as plating solution analyst. Subsequently became assistant to the chemist in charge of finishing, and was placed in charge of finishing in 1937. In 1941 was made responsible for all laboratory activities in organic and inorganic finishing, metallurgy, analysis, metallography and lubrication.

Taught chemistry and electrochemistry at Bridgeport Engineering Institute and conducted electrochemistry course for members of the Bridgeport Branch.

Hobbies are stamp collecting and model railroads but with A.E.S. activities and victory gardening these are almost a memory.

A. E. S. 1943-1944

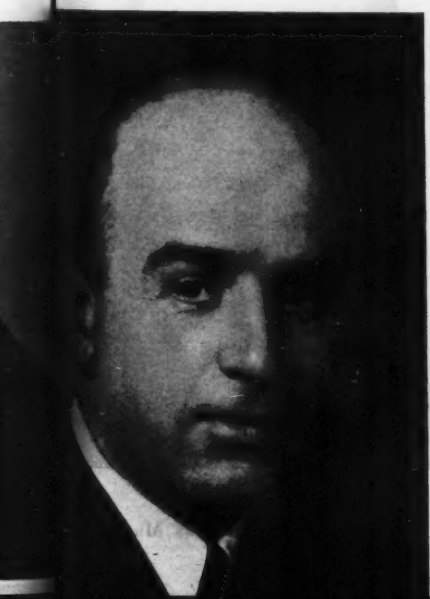
Graduated from Michigan State College June 1928, receiving a B.S. degree, having majored in electro chemistry. Employed at Dodge Brothers Division of the Chrysler Corporation from August 1928 to February 1934 as analytical chemist, having control of all electroplating solutions.

Employed from February 1934 to February 1935 by Yale & Towne Mfg. Company, Detroit, in charge of plating operations.

Employed by W. B. Jarvis Company since February 1935 as Plating Supervisor in charge of the Laboratory, research, and plating department.

MAURICE R. CALDWELL
1st Vice-President

WALTER L. PINNER
3rd Vice-President



Born 1901 at Montgomery, Alabama. Completed H.S. 1918 and received B.S.E. degree University of Michigan 1923. On graduation was employed by C. G. Spring Co., which subsequently became a division of Houdaille-Hershey Corp. Present position Chief Chemistry Engineer.

Have published a number of papers principally in S.A.E., Electro-Chemistry Society, and A.E.S. Highly prize the honor of being four times gold medal winner of A.E.S. President of Detroit Branch two years and served as Secretary of Electrodeposition Division of Electro-Chemistry Society. In addition am a member of A.S.M.

ELLSWORTH T. CANDEE
Executive Secretary

Born in Waterbury, Conn. where I attended grade and high school. Received degree of Chemical Engineer from Rensselaer Polytechnic Institute, and upon graduation joined the American Brass Company. In 1934 was transferred to the American Metal Hose Branch as technical supervisor. Currently employed as Technical and Development Supervisor.

Joined A.E.S. in 1928, serving the Waterbury Branch in various capacities, subsequently office of President 1940-1941. Elected First Vice-President National Society and President 1941-1942. Recently appointed Executive Secretary by President Wagner.

★ ★ ★

Born near Marion, Ohio. Received A.B. degree Oberlin College 1924. Shortly after graduation obtained sales position with Roy Mfg. Co. Later became Eastern Sales Manager. General Manager, Washington School of Art 1930-32. Formed publishers' representative business 1932. Served as Advertising Manager several publications during these years. Left position as Advertising Manager Phillips Andrews Publishing Company September 1942 to join A.E.S. as Publisher of Review and Business Manager of Society.

JACK BAIN
Publisher and Business Manager

31st Annual Convention

By ELLSWORTH T. CANDEE

Secretary

THE 31st Annual Convention held at the Hotel Statler in Buffalo, New York, June 7, 8, and 9, turned out to be a Convention of superlatives in many ways. First of all, there were more people registered than at any previous convention; the total registered being 925. Secondly, there were more papers read than at any other convention, and if anyone is in doubt as to the work put in by the various people registered at the Convention, he should ask those who attended the full length of each technical session.

The Monday morning session was opened by the Chairman of the Convention Committee, Chris Wernlund, at which time he received a greeting from the Mayor of Buffalo through his secretary, followed by a very fitting tribute to the members who died in the past year by George B. Hogaboom. It is unfortunate that we lost so many men who were active and interested in the Society, but at the same time it was fortunate that they were with us so many years to lend us heir help and advice. The technical session immediately followed with Mr. Joseph Ruff acting as Chairman. The papers presented in the morning were "The Effects of Government Restrictions on the Electroplating Industry," by William McCord; "A Report on the Relation of Electroplating to the Military Requirements," by Dr. William Blum; and "The Cronak Process," by E. A. Anderson. Mr. McCord should be congratulated on his frankness to admit that the estimates he made a year ago on the future of the Electroplating Industry in the war effort were wrong, but his poor estimates were due more to the rapid changing of the ordnance requirements than to the errors in his judgment.

The fact that Electroplating has assumed a far more important place in the war effort than it was assumed it might a year ago, is gratifying to all members of the Plating Industry.

Dr. Blum covered so many uses of plating in the military field that even to list them would look like an index to the uses of plating. His article should be read in detail to find all of the places where plating is used.

Mr. Anderson's review of the Cronak Process showed its uses, its limitations, and detailed the methods of applying it. This is one more process where an electroplater is called upon to put a finish on zinc or zinc coatings by methods which are familiar to him, although they are not strictly electroplating methods.

Without going over every paper in detail, we will merely hit the high spots of the papers read at each session.

At the Monday afternoon session with Horace Smith presiding, the paper by Mr. Cooper on "The Electrotinning of Strip Steel" was the application of electroplating to the steel industry, and gives the members an insight of plating as a big production rather than a relatively small production with which we are familiar.

The three papers presented on burring gave various methods of removing burrs for adaptability, depending on the type of tube burred. This is a new field for the members of the Society and gives us an optimistic lookout for post war work. Dr. Kellner's moving picture showing the burring operations was an excellent film, and we suggest that the branches make an effort to show this at their meetings throughout the coming season.

Monday evening was occupied by the International Fellowship Club's Open House, prepared and supervised by Tom Trombour. Tom was the first man that ran into the problem of abnormal attendance, but the hotel and the International Fellowship Club made a completely satisfactory arrangement and the party was its usual success. Dancing continued until 1:00 A.M. with at least thirty couples dancing until "Good Night Ladies" was played.

The Tuesday morning session with William Phillips presiding gave several papers of interest, particularly the paper by Mr. Mesle on the adhesion of silver to steel. The data he presented illustrates that the previous ideas on the proper way to get good adhesion of silver to steel are wrong and revisions of technique will produce better silver deposits. As usual, Mr. Mesle's work gave new data which is valuable to the members.

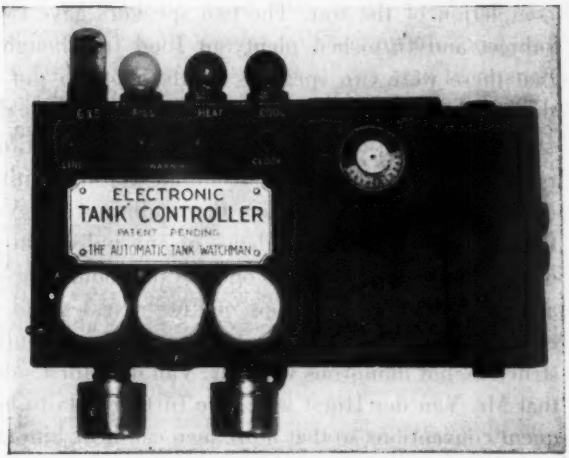
The paper on "Rapid Silver Plating" by Schaefer and Mohler was one which many people have looked forward to and one which complemented Mr. Mesle's paper. It was unfortunate that some of the details of the "Rapid Silver Plating Process" could not be disclosed under present day conditions.

At the Tuesday Noon Victory Luncheon there were two speakers. Dr.

This *Perfect* Watchman

is always on the job!

New Automatic Tank Control hailed by Plating and Finishing Industry



A long-felt need, and especially valuable in these days of labor shortages and inexperienced help, this new "Automatic Tank Watchman" provides positive control of solution levels, temperature and time.

Outstanding Feature at Electroplaters' Convention

One of the most talked of exhibits at the recent Buffalo Convention, the Electronic Tank Controller was the center of interest activity at all times. Years of practical experience in the plating industry, plus months of painstaking proving, guarantee its perfect performance.

REQUIRES NO MAJOR RECONSTRUCTION

Can be attached to your present equipment at small expense. Will . . . 1. Keep tank at constant level; 2. Maintain solution at correct temperature; 3. Warn operator of any leaks or over-filling; 4. Not operate from waves; 5. Prevent imperfect work; 6. Automatically start and stop tanks. Can be set for full week schedule.

Practically fool-proof, the Electronic Tank Controller works "without pay." Can be immediately installed by your own electrician on any type of tank without boring holes or making major changes. Guaranteed to perform all the duties we claim, without fuss or bother.

Write today for folder of complete details of all models and prices

PLATING PROCESSES CORPORATION

HOLYOKE, MASSACHUSETTS

Frederick A. Hodge who took the optimistic point of view on the outcome of the war; his optimistic prediction that the war in Europe would be over by Christmas was welcomed by all, but it was felt that a good many of those who listened were not quite as optimistic. He was followed by the Honorable Samuel B. Pettengill, former representative in Congress from Indiana, who did not take as optimistic a view of the early completion of the war. The two speakers gave two views on the same subject and furnished plenty of food for thought. However, the fact that there were two speakers on the rostrum put an added burden on the members in the afternoon and evening technical sessions.

The afternoon technical session with Charles Clindinin presiding was primarily concerned with chromium plating, with the high point talk of Mr. Van der Horst. During the reading of Mr. Van der Horst's paper, there was the largest attendance of any individual paper and it was the only paper during which no one left the room. Mr. Van der Horst's frank admission of the limitations of his processes and the trouble that was encountered during his development were not only interesting and instructive, but humorous with Mr. Van der Horst's delivery. It was hoped that Mr. Van der Horst will have further data to be presented at subsequent conventions so that more men can hear him talk.

Due to the full schedule of papers and the fact that sessions some time took longer than anticipated, it fell to the lot of the Tuesday evening meeting with F. C. Mesle presiding, to stay in session until the meeting was brought up to date. This session lasted from 8:00 P.M. to 12:30 P.M., and if anyone feels that the convention was all play for those who attended, he should have attended the full Tuesday evening session. This session was particularly concerned with lacquers and chemical finishes, and all the papers complemented one another to make almost a symposium on these two subjects. In addition, the paper by Austin Fletcher on "Hard Chrome Plating of Cutting Tools" was read and it was particularly gratifying to note the number of people who waited until 10:00 P.M. when his paper was read. It was typical of this Convention that a great many men made a point of going to the Convention to hear a few papers and after hearing these one or two papers, immediately left to go back to their work.

The Wednesday morning session was chiefly concerned with the cleaning of metals by various methods. The papers were all well received and it gave the people a chance to compare the various methods of cleaning; each one having its place depending upon the material to be removed and

the type of part to be cleaned.

Wednesday afternoon was taken up at a business meeting presided over by President Conley, at which time the Amendment offered by the Detroit Branch was approved and the Amendment offered by the Bridgeport Branch was defeated. John Feeley has given considerable thought to the matter, to the classes of membership, the name of the Society, and other details, and gave a particularly good talk on the result of his study of the matter. We expect that Mr. Feeley will submit his thoughts to the various branches later in the season so that all can read them and have time for complete study and discussion before the 1944 Convention.

Oscar Servis was raised to honorary membership of the Society, and it is regretted that due to his ill health, he could not be present to receive the honor in person.

Other business details such as the presentation of the budget, passing of resolutions, etc., will all be reported in detail in the published business proceedings. Mr. E. Sohn was reappointed head of research committee.

This Convention like all others put a burden on the host branch, particularly the General Chairman. The whole group at Buffalo is to be congratulated on their efforts to handle the details under trying conditions. Even the ladies who were given to understand that there would be little for them to do, found a complete program including a trip to Niagara Falls and two luncheons.

The election of officers was carried off in the usual manner and sketches of the newly elected officers will be found elsewhere in the *Review*. Cleveland was unanimously awarded the 1944 Convention and it was hoped that they will have as successful a convention as the Buffalo Branch.

INDUSTRY NEWS

VANNORSDALL TO VIC MINER CO.

Chas. T. Vannorsdall has joined the firm of Vic Miner Co., of Toledo, Ohio. The Vic Miner Co. are distributors of plating and polishing supplies and equipment.

Mr. Vannorsdall will serve as technical adviser and engineer, making possible a complete service to platers of this section.

Mr. Vannorsdall was formerly employed as plating foreman and engineer for the liquid cooled engine division of Aviation Corporation, Toledo, Ohio.

FRANK ROCK JOINS SEELEY CO.

Frank Rock announced his resignation from Roberts Rouge and has joined E. E. Seeley Co. of Bridgeport, Conn.

E. E. Seeley Co. have been manufacturing high grade buffing compounds since 1919.

LARRY GRIFFIN JOINS PURITAN

We wish to advise you Mr. Larry Griffin of Stratford, Conn., who was formerly with the Contract Plating Co., is now associated with our company. Any information which you may want on the paper "Brass Plating for Rubber Adhesion," can be obtained by calling him here.

POSITION WANTED

Mr. John Kushner of 90 Lincoln Street, Rochester, New York, wants position as a Foreman Electroplater. Experience of 18 years with all kinds of plating. Present position as pharmaceutical chemist with The Strassenburg Co., Rochester, N. Y. Not subject to draft. Can produce excellent references. Please contact at above home address.

NEW BOMB FINISH

Zapon Division, Atlas Powder Company, announces that it has perfected Zapon Division, Atlas Powder Company, announces that it has perfected Zapon S-631, a new bomb finish which meets U. S. Army ordnance specification No. AXS-946. The new formulation was especially developed to meet the mandatory requirements for finishing bombs and heavy ammunition which become effective July 1, 1943. The company's announcement stated that the product is now available for this important job.

FREDERICK B. STEVENS, INC., OPENS CLEVELAND OFFICE

Frederic B. Stevens, Inc., of Detroit, Michigan, have opened a branch office at Room 1123, Fidelity Bldg., 1940 E. Sixth Stret, Cleveland, Ohio. The office may be reached by telephone—Cherry 6165.

This company manufactures Foundry Supplies and Equipment; Buffing and Deburring Compositions; Metal Finishers' and Electroplaters' Supplies and Equipment.

The company's business will be handled through the Cleveland office by experienced men; the Foundry Supply and Equipment field by Mr. Frank J. Balsley, and the other lines by Mr. Chas. H. Stoddard. The opening of a Cleveland office was motivated by the company's desire to render more efficient service to their many accounts in the Cleveland area.

NEW BODY STOCK IN THE REVIEW

Readers will notice this issue of the Review is printed on much lighter stock than before. For the duration of the paper shortage we will be obliged to use this stock to come within the restrictive order. However, using lighter stock will make it possible to keep the page volume up and also to continue the month to month improvement started in January of this year. By going to a lighter stock makes it possible for us to continue giving readers new features, new departments, and other improvements which is part of our present policy.

THE QUESTION BOX

CHICAGO BRANCH

Can electro plating of 10% tin and 90% lead coating be controlled to any desired thickness on steel, can this type of plating be soldered by the baking method.

Ans. It was thought that the fluborate lead solution would answer the purpose and that you could solder by the baking method by getting a solder that would melt at about 350°.

What is a quick method for striping .001 copper from steel, without attacking the steel.

Ans. Several suggestions offered such as concentrated nitric acid, reverse current in a high cyanide bath, or using 12 volts reverse current in a 6 oz. chrome acid bath.

What is the formula for Zinc, mechanical plating solution with a brightner.

Ans. 4½ oz. metal, 12½ oz. cyanide, 10 to 12 caustic.

What is the P.H. of Bright Nickel solution also acid copper solution.

Ans. 2½ to 4½ P.H. for bright nickel, and less than 1 for acid copper. It's rather beyond control, on the copper.

How much caustic soda should be used in an old brass plating solution for barrel plating high in carbonates, to bring out the proper color.

Ans. None. As both caustic and amonia bring out the zinc and are hard to control, therefore they should be avoided, use a P.H. of about 11.5 for a canary yellow color, temp of about 80 to 90°.

How can carbonates be removed from a cyanide copper solution?

Ans. Stir in calcium sulphate about 1¼ lbs. for each 1 lb. of carbonates that you want to remove then allow to settle and filter, first try this method out on a small sample solution.

What is the best way to strip cadmium?

Ans. Several suggestions offered such as muriatic acid, ammonia nitrate, and also making the work anodic.

Can all types of smut be removed by chemical or electrolytic means?

Ans. There are several methods such as Bullard Dunn process, also a mixture of sulphuric and muriatic acids, and also reverse current in a sulphuric strip.

Mr. Mattacotti found the following questions in the question box.

No. 1. What is a dip for coloring zinc plated parts dark brown or black.

Ans. There are several different processes on the market for this, as well as dipping in nickel or plating black nickel.

No. 2. What acid is used for etching steel rules.

Ans. Many acids can be used either straight Nitric, or nitric and Hydrocloric but the proper stopoff, timing, etc. are very important.

No. 3. What method is used for plating copper on stainless steel.

Ans. The May issue of Metal Finishing covers the plating of stainless steel and should be read by all those interested in plating stainless steel.

J. W. HANLON, *Secretary*

LOS ANGELES BRANCH

Any one in Los Angeles doing any indium plating?

Ans. No one known.

How much silver can be plated in a regular silver bath in an hour?

Ans. About two thousandths.

In gold plating a small brass cup shape is plated to stand thirty minutes acid test but the gold blisters appear. Why?

Ans. No satisfactory answer.

What is a good electro deburring solution for brass?

No answer.

What can I do to increase the throwing power of my cadmium solution?

Ans. Increase the cynide or take out carbonates.

How far will cadmium throw in a tube?

Ans. Two times the dimension.

How to strip chrome from steel that has been heat treated?

Ans. Caustic solution and use reverse current.

C. C. MCLAREN, *Secretary*

DETROIT BRANCH

During the May meeting of the Detroit Branch of the American Electroplaters' Society, the following questions were found in the question box:

Is the Sulfamate Lead deposit less or more porous than lead deposited from a Fluoborate Bath?

Ans. Tests conducted at the General Motors Research Division indicate less porosity in the lead deposited from the Sulfamate Solution.

Does the Lead Fluoborate Bath have high throwing power?

Ans. No it does not possess inherently high throwing power, yet under proper conditions it can be made to equal that of Nickel Plating Baths.

Why is it impossible to spot weld two lead plated steel sheets?

Ans. Due to too much lead being present, a lead weld of poor strength is secured rather than the intended steel to steel weld.

How does lead compare with Cadmium as regards to salt spray?

Ans. No comparison should really be made unless the coating is to be used in a salt laden atmosphere. Thick lead coatings approximately .004" thick will withstand a salt spray of 350 hours. An identical thickness of Cadmium will resist salt spray for almost an unlimited period.

How about the adherence of paint to lead coated metals?

Ans. It is not too good. The use of a Chromic Acid Dip is suggested to improve adhesion. The use of lacquer coatings similar to those used in the casket industry was also suggested.

Would not a treatment to form a peroxide coating on lead improve resistance to corrosion?

Ans. It was thought that some improvement could be secured. There are two proprietory lead oxide coatings on the market.

J. H. HOEFRE, *Librarian*
Detroit Branch

Safe—Fast—Efficient

An unbeatable combination in cleaning compounds and the exact definition of PERMAG. Used in scorces of plating establishments engaged in war work. PERMAG helps solve the difficulties found in new work.

Request our Folder, "PERMAG in the Electroplating field."

MAGNUSON PRODUCTS CORPORATION
Mfrs. of Specialized Scientific Cleaning Compounds for Industry
Main Office: 50 Court St. Brooklyn, N. Y.
In Canada: Canadian PERMAG Products Ltd., Montreal and Toronto

PERMAG Cleaning Compounds

THE ABSTRACT SECTION

MAURICE R. CALDWELL

Chairman Program and Educational Committee

The Theory of the Potential and the Technical Practice of Electrodeposition V. The Two-Dimensional Rectangular Enclosures. By CHARLES KASPER. *Trans. Electrochem. Soc.* **82** (Preprint 4) (1942). The very useful practical information which may be obtained from the somewhat abstruse mathematics of this series of papers now begins to appear. What plater has not tried to "throw" into the corner of a difficult piece by placing "wedge" anodes in the corners? The problem is attacked by considering a hollow square-shaped cathode with an internal anode. As every plater has discovered, the deposit is heaviest at the center of each side of the square, where the anode-cathode distance is smallest, and it falls off to zero in the corners.

To counteract this falling off, many platers have tried using an anode shaped roughly like an "X," with the edge of each leg of the "X" like a blunt wedge pointing into the corners of the square. By placing the edges of the wedges a little more than one-half the distance from the center of the square to the corners, a fairly uniform current distribution is obtained over about 50-60% of the side wall of the square, but it drops off sharply to zero in the corners. If the edges of the wedges are placed farther into the corners, a heavy current is obtained on the side walls where they are nearest the wedges, but it drops off very seriously in the middle portion of each side, and also drops off sharply to zero in the corners, as well.

In order to calculate the current flow, instead of considering the X-wedge-shaped anode at the start, it is easier to discuss using one anode in the center and four small auxiliary anodes, one in each corner, so that the anodes are arranged somewhat like the number five on dice. When this problem was solved, it was readily extended to cover the X-wedge-shaped anode. This is typical of the mathematical approach used in these papers.

By using this five anode arrangement, and permitting only one-third of the current to flow from the auxiliary corner anodes, while two-thirds flows from the center anode, a much more uniform current distribution is obtained on each side of the square. However, the current still drops to zero in the corners.

Plating into one right angle is much like plating into one corner of the square. It is shown that it is not possible to plate into absolutely sharp corners, even using wedge-shaped anodes. However, by using such anodes, it is possible to obtain a substantially uniform deposit in a *rounded* or filleted corner. The edge of the wedge-shaped anode must be at about the center of the radius of the fillet; and its *exact* position is important. "These requirements are not easily fulfilled in practice." In order to have a practical anode-cathode distance, the radius of curvature must be approximately equal to this distance.

A *sharp* right-angle corner can be plated uniformly by insulating ("stopping off," or masking) two opposite sides of the follow square, or rectangle. When the two other sides are plated, the insulation is moved to them and the remaining two sides are plated. If a sound or elliptical anode is used in the center of the hollow square, there is a 29% variation in current density over the two faces being plated. However, if two anodes are used, the variation is only 0.5%. The proper positions and shapes of the anodes are shown. This method may not be used for plating shapes with *rounded* corners without using special shields, to be described in a later paper.

The diagrams and calculations may also be used for plating the interiors of long rectangular troughs or trays, or circular cans or pans (cylinders closed at one end), in the special case where the width or diameter is twice the height: only half of

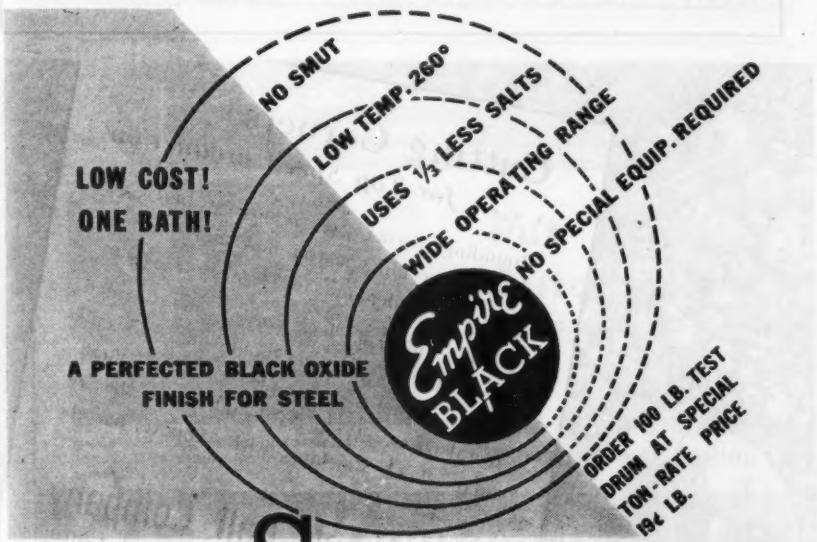
each square is then used. This is the "method of sectioning" mentioned so frequently in these papers. The necessary shape of the anode, and size of the fillets required on the corners, are shown. Applications to shapes of other proportions are deferred to a later paper.

These considerations apply also to the plating of the exterior of a circular cylinder (tube, pipe, shaft, etc.) inside a hollow square of anodes. Substantially uniform current distribution is obtained by making the sides of the square at least three times as long as the diameter of the cylinder.

The mathematics, as in previous papers, are placed in a separate section, and divided into two parts, one of which is more elementary than the other. It is unfortunate that many readers neglect the practical deductions in the simple descriptive section, merely because the calculations on which they are based appear formidable. For this reason, this abstract, like those of the earlier papers, has been somewhat extended. A study of the diagrams and description in the original papers is earnestly recommended to all who are interested in obtaining more uniform plating.

BY ERNEST LYONS, JR.

GLASSTONE'S BOOK
DELAYED 2 WEEKS
SORRY!
REASON: SHIPPING CARTONS

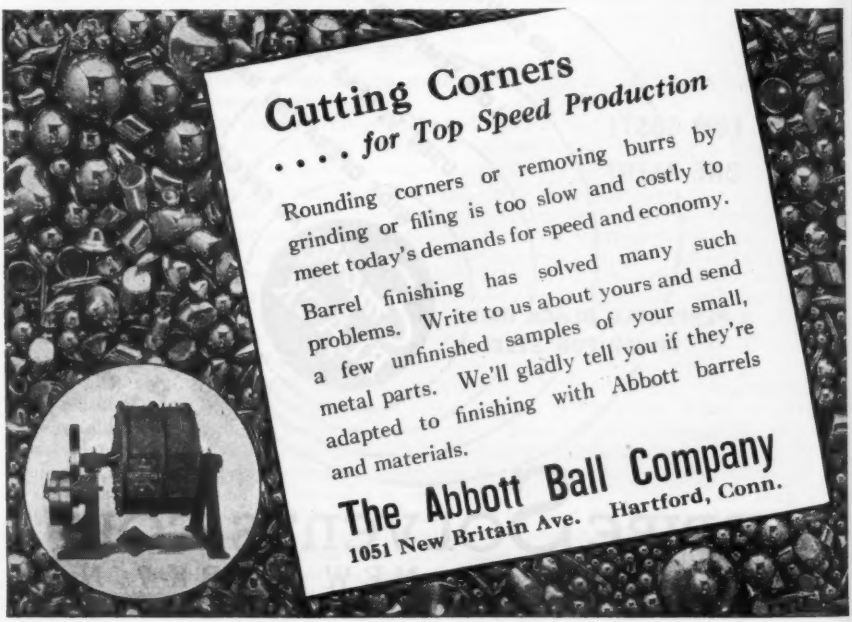

NO SMUT
LOW TEMP. 260°
USES ⅓ LESS SALTS
WIDE OPERATING RANGE
NO SPECIAL EQUIP. REQUIRED
LOW COST!
ONE BATH!
A PERFECTED BLACK OXIDE FINISH FOR STEEL
Empire BLACK
ORDER 100 LB. TEST DRUM AT SPECIAL TON-RATE PRICE 194 LB.

EMPIRE SOLVENTS CORP.
170 BROADWAY, NEW YORK 7, N Y

FOR SALE Available for Immediate Shipment

3—5000/2500 AMPERE, 6/12 VOLT, **A. P. MUNNING CO. "OPTIMUS"** Motor Generator Sets. Full Panel-Board Arrangement. Excellent Condition.
3—5000/2500 AMPERE, 6/12 VOLT, **EAGER ELECTRIC CO.** Motor Generator Sets. Excellent Condition.
1—4000/2000 AMPERE, 6/12 VOLT, **EAGER ELECTRIC CO.** Motor Generator Set. Excellent Condition.
1—3500/1750 AMPERE, 6/12 VOLT, **EAGER ELECTRIC CO.** Motor Generator Set. Excellent Condition.
1—3000/1500 AMPERE, 6/12 VOLT, **MUNNING "OPTIMUS"** Motor Generator Set. Full Panel-Board Arrangement. Excellent Condition.
1—2000/1000 AMPERE, 6/12 VOLT, **EAGER ELECTRIC CO.** Motor Generator Set. Excellent Condition.
1—1500/750 AMPERE, 6/12 VOLT, **BENNETT & O'CONNELL.** Motor Generator Set. Full Panel-Board Arrangement. Excellent Condition.
1—1500/750 AMPERE, 6/12 VOLT, **HANSON & VAN WINKLE CO.** Motor Generator Set. Full Panel-Board Arrangement. Excellent Condition.
1—1000/500 AMPERE, 6/12 VOLT, **MUNNING "OPTIMUS"** Motor Generator Set. Full Panel-Board Arrangement. Excellent Condition.
1—1000 AMPERE, 6 VOLT, **IDEAL ELECTRIC CO.** Motor Generator Set. Excellent Condition Throughout.
1—1000 AMPERE, 8 VOLT, **JANTZ & LEIST** Motor Generator Set. Excellent Condition.
1—750/375 AMPERE, 6/12 VOLT, **BENNETT & O'CONNELL ELECTRIC CO.** Motor Generator Set. Full Panel-Board Arrangement. Excellent Condition.
1—750 AMPERE, 6 VOLT, **HANSON & VAN WINKLE CO. BELT-DRIVEN GENERATOR.** Complete with Panel-Board.
1—750/375 AMPERE, 6/12 VOLT, **CHARLES J. BOGUE** Motor Generator Set. Excellent Condition. Full Panel-Board Arrangement.
1—500 AMPERE, 30 VOLT, **WOTTEN ELECTRIC CO.** Motor Generator Set, for Anodizing. Full Panel-Board Arrangement. Excellent Condition.

M. E. BAKER COMPANY 143 SIDNEY STREET CAMBRIDGE, MASS.


Cutting Corners
. . . . for Top Speed Production
Rounding corners or removing burrs by grinding or filing is too slow and costly to meet today's demands for speed and economy.
Barrel finishing has solved many such problems. Write to us about yours and send a few unfinished samples of your small, metal parts. We'll gladly tell you if they're adapted to finishing with Abbott barrels and materials.
The Abbott Ball Company
1051 New Britain Ave. Hartford, Conn.

Get Faster Results and Better Luster!

Improved ball burnishing results are certain when you make up your mind that what you need in your barrels is not just a "soap", but a compound designed to do the particular job called for in your operations.

This means a bit of testing and trying out of different compounds, but it is well worth while, in view of the faster, better work you'll get in the end.

MAGNUS BALL BURNISHING COMPOUNDS

cover the entire range of ball burnishing operations. If one of our standard compounds does not succeed in improving your results, we are ready to work out a special material to meet your needs.

ASK FOR RECOMMENDATIONS

MAGNUS CHEMICAL COMPANY

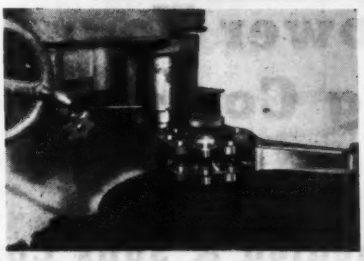
41 SOUTH AVENUE, GARWOOD, N. J.

Service Representatives in All Principal Cities

Magnus CLEANERS·METHODS·MACHINES

Solving the Man-Power Shortage

in POLISHING..BUFFING..
WIRE BRUSHING..BURRING



Special Acme Machine for polishing engine parts. More uniform production — and no scrap.

Put "Acme" Automatics

On the Production Front!

•

Write for Information On Man-Power Saving

ACME *Manufacturing Co.*

1642 HOWARD ST. • DETROIT, MICH.

Builders OF AUTOMATIC POLISHING AND BUFFING MACHINES FOR OVER 25 YEARS

Billions OF VITAL ARMAMENT PARTS

are *Cleaned* with Detrex Equipment and Chemicals

Aircraft manufacture represents but one of the many phases of armament production in which Detrex products are in constant use. Throughout all metal industries where war material of every type is being produced, Detrex machines and chemicals are meeting every requirement for effective and economical metal cleaning.

DETROIT REX PRODUCTS COMPANY
13010 Hillview Avenue Detroit, Michigan

Variable Speed Lathes Lower Your Buffing Costs

Any speed from 1800 to 3000 r. p. m. instantly
All types and sizes. Write for particulars

Chas. F. L'Hommedieu & Sons Co.

MANUFACTURERS

Gen. Office and Factory:
4521 Ogden Ave.
Chicago
Dealers in Principal Cities

Branches:
Cleveland, Los Angeles
Wm. R. Shields,
Detroit

COMPLETE PLATING PLANTS INSTALLED

GOING FAST

The Fundamentals of Electrochemistry and Electrodeposition by Samuel Glasstone will be ready for mailing in about two weeks. Already orders equal to 1/3 our first print order have been received. The books are going fast. Paper restrictions may prevent a second printing. To be sure of your copy — order Now!

problems?
trouble?
in your BUFFING and POLISHING?

Divine Brothers, Utica, N.Y., have been investigating problems, offering advice, recommending practical solutions, proper treatments and equipment for all kinds of finishing since 1892.

SPEED YOUR PRODUCTION
by consulting a specialist

Divine Brothers Company
UTICA, N.Y., U.S.A.

Remove Copper with McKEON'S "Liquid Sulphur" TRADE MARK REG'D

ASK

SULPHUR PRODUCTS CO.
Greensburg, Pa.

Predictable Performance

No crystal gazing guesswork is necessary to foretell the future of top quality welded tanks in plating service. "Long life and full satisfaction" is the experience that you can confidently expect.

Top quality construction starts to pay dividends where ordinary low priced construction begins to fail. Because the relatively small margin of cost pays for refinements in material and workmanship that result in longer service life, a look into the future justifies your investment in Stortsweldmanship.

STORTS WELDING COMPANY

42 Stone Street Meriden, Conn.

Manufacturers of Welded Fabrications to Specification

BRANCH NEWS

Business and Social News · Educational Activities

GLASSTONE BOOK DELAYED

Quite a number of orders were taken for Glasstone's book at the Convention and additional orders reach us daily. We regret delivery will be delayed another two weeks due to difficulty encountered in obtaining shipping cartons. Please bear with us! Your copy will be mailed on the same day cartons are delivered to us.

TOLEDO BRANCH

A regular monthly meeting of the Toledo branch was held in room 201, of the Hilcrest Hotel, May the 7th, 1943.

The meeting opened at 8 o'clock with 30 members and guests present. The past president presided over the meeting at the request of the president, Mr. Dressel. The minutes of the previous meeting were approved as read. Messers. Walter Wieker, Wm. Ward Hunlock, and Paul Dressel were elected delegates to the 31st annual convention. Messers. James Gerity, Wendlin J. Ehman, and Gaston Bergeman as alternates.

Mr. Lewis, of the Northwestern Chemical Co., the main speaker of the evening, gave a very interesting and educational talk on the subject of electropolishing, showing colored slides showing the results of the process along with his talk. The interest of the members in the subject matter was very apparent by the many questions asked the speaker, which he very capably answered.

Mr. Barney Case, technical engineer of the Hanson Van-Winkle Munning Co., spoke briefly on trouble shooting in the plating field. Some of the experiences encountered by the speaker were very interesting and left many of the members with something to think about. At the conclusion of Mr. Case's talk the meeting adjourned after the branch through their President expressed their thanks and deep felt appreciation to both speakers of the evening, and the companies they represented for the splendid cooperation, and for making it possible for us to have these men on our program.

A very pleasant surprise awaited all those who attended the meeting, for at the end of the meeting, a very appetizing buffet lunch and beer awaited them in the next room. Thanks to Mr. Lewis of the Northwestern Chemical Co., who not only furnished us with a very good educational program but also with a very pleasant social evening after the meeting, not to mention the ration stamps that were saved next day for food.

Next meeting is to be the 1st Thursday in June, and Mr. Erstrom of the Technical Process Division will be the speaker.

G. P. H. BERGEMAN, *Secretary*

GRAND RAPIDS BRANCH

The Grand Rapids Branch held its

E. Reed Burns

Specialists in

BURRING COMPOUND
EMERITE – for Carbon Steels
ALUMINITE – for Stainless Steels
STEELSHINE ROUGE – Fast Cut to Mirror Finish
ERBCO POLISHING WHEELS – Canvas – Muslin, all densities

Send for new bulletins "A", "B", "E", and "R", and for samples

E. REED BURNS MFG. CORP.
40 Withers Street, Brooklyn, N.Y.
The "Know How" People

3 WAYS TO SOLVE Degreasing Problems

D'OILER

TELEPHONE
TELEGRAPH
WRITE

MECHANICAL PROCESS CO.
15 Valley St., South Orange, N.J.

regular meeting May 14th at the Browning Hotel, Sheldon Avenue. The meeting was started promptly at eight o'clock by the showing of a moving picture entitled "Hidden Gold". The picture was shown through the courtesy of the Dupont Company and forcefully illustrated right and wrong methods of spraying synthetics. The object of the film is to aid the finishing department in improving the quality of sprayed coatings as well as reduce labor and material costs.

The regular business was then conducted after the showing of the picture, and a report was given to all present by the Officers of the Grand Rapids Branch. Various methods of their work for the new year were outlined and discussed.

Mr. Frank Snyder, one of our own members, affiliated with the Wolverine Finishing Materials Company spoke on "Suggestions on Lacquer Application". He discussed spraying technique and the effect of various factors such as fluid pressure, fluid tips and air caps. He described the various types of lacquers and the method of selecting material best suited to the job. He also illustrated with diagrams from test charts covering hot lacquers and various viscosity readings.

An open forum was then conducted. Questions pertaining to lacquers and organic finishing were asked and solved.

The meeting was then adjourned and the popular 25¢ lunch was served by the hotel – sandwiches and coffee, and to further aid the coffee shortage, Pabst Blue Ribbon Beer was on the menu again.

C. E. ABEL, *Sec.-Treas.*

LANCASTER BRANCH

The Lancaster Branch met May 14, at Redmans Hall, 8 o'clock. There were 25 present. The nominees for President, Vice President and Delegates were announced and the meeting thrown open for additional nominations. No nominations being made the secretary was instructed to cast a ballot for the nominees.

The following officers were elected for year 1943-44: President, H. L. Hovis; V. President, C. L. Wilson; Sec. Treas., W. H. Fordney; Board of Managers, C. Brubaker, N. J. Gebert, R. Hoenstine.

The following delegates were nominated and elected to represent the Lancaster Branch at the convention: H. L.

Hovis, R. Hoenstine, LeRoy Critchfield.

No further business appeared and the retiring president turned the meeting over to the incoming president who made a few well chosen remarks after which the meeting was adjourned.

A sound film of the General Electric Shops was then shown. This was very interesting and Ted Schwalm, one of our members announced that the projector would be available at Stevens Trade School for other pictures.

After the movies, refreshments and a ration lunch was served. Bowling and cards rounded out a very pleasant evening.

WILLIAM H. FORDNEY, *Secretary*

CLEVELAND BRANCH

Minutes of the meeting of the Cleveland Branch of the American Electroplaters' Society held in the Cleveland Hotel on Friday evening, May 7, 1943.

The meeting was called to order by our President, Mr. Wm. E. O'Berg at 8:30 P.M. A very good attendance was had.

The minutes of the April 3, 1943, meeting were read and approved.

The application of Mr. Joseph F. Kramer of Cleveland, Ohio, for Active membership was read and referred to the Board of Managers.

Under election of members the following names were read at the March 6th meeting and which were published in the April *Review* were elected: Eugene W. Hauck of Cleveland, Ohio, as Active; Joseph L. Unocic of Cleveland, Ohio, Active.

Receipt of the transfer of Mr. Charles H. Stoddard, Associate Member from the Chicago Branch was announced.

Our Librarian, Mr. John Honnecker, then introduced Mr. L. R. Davidson, of the Sturgis Products Co., the speaker of the evening. His subject was "Burring." This proved to be not only very interesting but also very instructive as well. Mr. Davidson was able to illustrate his talk with samples of work both prior to and after burring, together with the materials and descriptive matter of the equipment used.

After a rising vote of thanks to the speaker for his excellent talk the meeting adjourned at 10:30 P.M.

GEO. B. SVENSON, *Secretary*

FOR
HARD CHROMIUM
USE
ZIALITE
ADDITION AGENTS
to obtain
1. Finer grain structure
2. More durable plate
3. Smoother heavy plate
4. Greater throwing power
5. Less sensitivity to sulphate ratio.

Send a sample of your present bath, together with the gallonage, to see if it is suitable for conversion to this improved formula.

ZIALITE CORPORATION
143 Exchange Street
Worcester, Mass.

Parts for the
ARMY, NAVY AND MARINE CORPS
Are finished with
ADVANCE
Polishing Wheels

●

ADVANCE-POLISHING-WHEELS, INC.
844 WEST 49th PLACE
CHICAGO

47 Wallangra Road, Dover Heights,
New South Wales, Australia,
19th April, 1943.

Ellsworth T. Candee, Esq.,
Acting Secretary,
"Monthly Review",
Box No. 791,
Waterbury, Conn., U.S.A.

Dear Sir:

After careful study, I wish to bring under your notice, the pleasant surprise experienced in Australia by those who received January's edition of the "Monthly Review". We had become accustomed to the layout of past Reviews, and always received our copies with enthusiasm but the latest publication to arrive brought greater interest, and in my opinion, a definite improvement not only from a technical angle but as a journalistic achievement.

Even if there are 7¼ thousand miles between our great Countries, the shop problems are identical and the Question Box section of the Review always answers our questions even if asked by a member in your country. I have often had problems put to me by Australian Platers and found the same question in the Review where the correct answer was also published.

This section is doing a great service and each edition brings forth fresh and interesting questions and answers.

Following on the idea of the Question Box I would like to make this suggestion.

Each edition of the Review to have a small space, of say ¼ page, set aside and headed with a Caption such as "Did You Know?", "Hints of the Month", "Wrinkles" and such like, in fact anything to attract attention to the section.

Under the Caption there would be printed a few snappy suggestions or statements concerning plating solution and metal finishing. Each suggestion would consist of only one line so that they would not be confused with papers written on a subject.

Before closing I must express our appreciation and admiration for your Soldiers, Airmen and Naval personnel who have visited our Country and who have fought alongside our own boys in New Guinea and other theatres of War.

You will be interested to know that many Defense Contracts in Australian Plating Shops carry U. S. Navy, Army or Airforce Contract Numbers. Many of these Contractors are using processes, the formulas of which together with specifications, were obtained from the "Monthly Review".

Wishing the "A.E.S." every success in furthering the cause of "Good Plating",

I am,
Yours faithfully,
G. WALKER

LANCASTER BRANCH

The Lancaster Branch of the A.E.S. met Friday, June 18th at Stevens Trade School. The newly elected officers presided.

The secretary-treasurer read his annual report and it was accepted by the members.

The members of the Branch, R. Hoenstine and W. H. Fordney who had attended the convention presented their reports. These reports were very complete and interesting. After the reports an open discussion was held on plans for next year's program.

The meeting closed at 10 o'clock.

WILLIAM H. FORDNEY, *Secretary*

ROCHESTER BRANCH

The regular monthly meeting of the Rochester Branch of the A.E.S. was held Friday evening, May 21, at the Hotel Seneca.

The meeting was called to order at 8:00 by President John Q. Adams.

Minutes of the previous session were read and approved and the finanacial report was read to date. May 7, the Board of Managers audited and closed the books for the year.

Election of officers for the new year was held. The newly elected officers are President, John Q. Adams; Vice-President, Richard Waite; Secretary-Treasurer, Donald C. Blum; Librarian and Educational Chairman, William M. Tucker. The new Board of Managers is S. P. Gartland, Charles Hendershott, Frederick Bruening, Henry Cameron.

Delegates to the National Convention were instructed as how to vote on the amendment to change the name of the Society.

The next meeting will be held the third Friday in September at the Hotel Seneca.

Meeting was adjourned at 10:30.

DONALD C. BLUM, *Secretary*

PHILADELPHIA BRANCH

Philadelphia Branch, Friday evening, May 28, 1943, President Verrell turned the gavel over to the Librarian, who introduced Mr. D. Hartshorn of the Enthone Co., of New Haven, Conn.

Mr. Hartshorn gave a very interesting lecture on "Blackening of Ferrous and Non-Ferrous Metals"; discussing, at length, the effect of his company's solutions on iron, steel, aluminum, etc.

After answering the numerous questions, Mr. Hartshorn was given a rising vote of thanks.

The minutes of the previous meeting were approved as read.

The application of A. H. Okamoto, active, was referred to the Board of Managers.

K. E. Langford and E. R. Ziegenfuss, associates, were elected members, after approval by the Board of Managers.

The annual report of the secretary and treasurer, as read by the Board of Managers, was approved.

Installation of the officers was waived due to re-election, with the exception of the 2nd Vice-President Gene Zurbach Jr. who was duly installed.

PAUL MENTZER, *Secretary*

TORONTO BRANCH

Toronto Branch held its regular meeting in the Royal York Hotel June 11 with President Boaz in the chair and a good attendance including Mr. John Feeley of the Montreal Branch.

One application was received and four new applications were ballotted on and elected into membership as follows: Mr. J. H. Heslin, Mr. H. Y. Bunting, Mr. E. P. Blandy and Mr. F. N. Oakly.

All bills were ordered paid as our next meeting will not be held until September.

Under the heading of good and welfare Mr. Boaz called on Mr. Walter Barrows to read his delegates' report of the Buffalo convention; this report was as usual a Barrows report, from the smallest detail of the proceedings to personal talks with members of all Branches. Walter missed nothing, just seemed to be in the thick of this grand Buffalo affair.

President Boaz then introduced Mr. John Feeley and invited him to say a few words. Mr. Feeley spoke well of the

BLACK-MAGIC

"The one-bath process"

Preferred by the Nation's outstanding industries.

Approved for Ordnance and other applications wherever black oxide is specified.

Write for technique on reclaiming used bottle crowns and tin can sheets.

OTHER PRODUCTS FOR RUST-PROOF FINISHING

Write for portfolio

Mitchell-Bradford Chemical Co.

BRIDGEPORT, CONN.

ROBERTS

BUFFING and BURRING COMPOUNDS ASSURE

The Best Quality, Correct and Uniformly controlled manufacturing, Fair Price Policy, and Special Formulas for Industrial Demands.

WE PRODUCE

BURRING COMPOUNDS .....All types
ROUGES (Iron Oxides) (Quick wash) All grades
TRIPOLI .....Numerous grades
EMERY PASTE .....All size grains
COMPOUNDS .....For every metal
GREASE STICKS ....For better efficiency
LIME COMPOUNDS .....Many formulas

—Let us send you some free samples—

The ROBERTS ROUGE COMPANY

STRATFORD CONNECTICUT

PRECIOUS METAL SALTS

Merck Precious Metal Salts are manufactured by precision methods. The finished products must meet extremely high standards for purity and uniformity.

Every plater knows that purity and uniformity are two qualities which supplement the operator's skill in producing a satisfactory plating job.

Prices will be mailed on request.

MERCK & CO., Inc. *Manufacturing Chemists* **RAHWAY, N. J.**

New York, N. Y. • Philadelphia, Pa. • St. Louis, Mo. • Elkton, Va.
Chicago, Ill. • Los Angeles, Cal.

In Canada: MERCK & CO. Limited, Montreal and Toronto

"CORRECTION"

Through an error, the term "Trichlorethylene" instead of "Tetrachlorethylene" was used in the advertisement of the Phillips Manufacturing Company on page 447 of our May issue.

You can't do a satisfactory Cleaning Job with ordinary Compounds

— Neither can you produce a fine plating job on metal that has imperfectly cleaned surfaces; they must be chemically clean, and this requires a highly specialized efficient powerful compound.

Leading electroplaters are using PERMAG Cleaning Compounds *which are guaranteed* and serving the industry over 20 years, and increasingly growing in favor. Write for details.

Main Office:
50 Court St.
Brooklyn, N. Y.

MAGNUSON
PRODUCTS CORPORATION

In Canada:
Canadian PERMAG
PRODUCTS, Ltd.
Montreal . Toronto

PEERLESS PRODUCTS

for War Production Work

Special Felt, Tampico, Wire, Cloth, Canvas, Leather, Polishing Wheels

Special Burring Methods, Compounds and Abrasives, Oil-Dri Anti Slip-Treatment for Oily Floors. Not only absorbs oil, but is fireproof.

GEORGE A. STUTZ MFG. CO.

Plating and Polishing Equipment and Supplies

1645 CARROLL AVENUE CHICAGO, ILL.

FOR GETTING MORE WORK FROM YOUR GRAIN, USE

4A CEMENT and THINNER

A Substitute For Glue

NO WORRY ABOUT GLUE SHORTAGE WITH 4A CEMENT AND THINNER. Polishing wheels are free cutting, long lasting and economical when set up with 4A Cement.

COLORING ROUGES UNIFORM, CAREFULLY GRADED RAW MATERIALS, EXPERTLY COMPOUNDED BY HARRISON'S TECHNICIANS, INSURE ROUGES THAT GIVE HIGH LUSTER AND FAULTLESS FINISHES.

POLISHING COMPOUNDS 4A symbolizes these four features which you require for high speed polishing, mirror finishing of all kinds of steel, including stainless steel, carbon steels and hard-to-buff alloys. Use it on any kind of a wheel, soft, medium or hard.

Tell us your problem and samples of compounds, rouges or cement will be sent. We will be pleased to recommend proper methods.

"AMPLE STOCKS TO TAKE CARE OF OUR TRADE"

4A **HARRISON and COMPANY**

Haverhill, Mass.

Barrows report and of the Buffalo convention, mentioning suggestions that would benefit the A. E. S. as a whole. He said he wished the American Electroplaters' Society to be a world affair. The members gave him a hearty vote of thanks and asked him to come again.

Meeting adjourned at 10:30.

JAMES S. CAIRNS

NEWARK BRANCH

The regular meeting of the Newark Branch, A.E.S., was held on Friday eveing, May 21, 1943, at the Hotel Robert Treat, Newark, New Jersey. The meeting was called to order by President William Bruhns at 8:30 P. M. All other officers were present.

The minutes of the two previous meetings were read and approved. There were no communications and the bills which were presented were approved and ordered paid.

The following applications were voted to take the regular course: Associate membership: Oliver Oakley Brant, Jack L. Pettit, Nick Piegaro, Marvin A. Schwartz, Rudolph Jacob, Arthur S. Kohler and Sidney Louis Boyar.

The following candidates were elected to Active membership: David T. Cook of Western Electric Company, Joseph Gruszkiewicz of Walter Kiddie & Company, and Howard F. Johnson of the Lotte Chemical Company, Inc., to Associate membership.

The Board of Managers reported on the financial status of the Branch, stating that they had audited the books of the Secretary and Treasurer and found them in a very good condition. That plus the $1,500 invested in War Bonds there was a substantial bank balance, the amount not to be published, and that only five members were in arrears for dues, which in all is considered a very good record.

The Board of Managers recommended that the Secretary-Treasurer's salary be raised to $200 a year, which recommendation was adopted. They further recommended that the members' dues, which is now $6.00 a year, be increased and after considerable discussion a motion was made and unanimously carried that the membership dues beginning with our fiscal year June 1, 1943, shall be $8.00 per year.

The next order of business was election of officers. This procedure deviated somewhat from previous elections. Mr. Tom Haddow, one of our Charter Members, nominated all the present officers, with the exception of the Librarian, for re-election. The nominations were seconded by Mr. George Klink. The following are the names of the newly elected officers:

President, William Bruhns; 1st Vice President, Robert Sizelove; 2nd Vice President. Louis Donroe; Secy.-Treas., George Wagner; Librarian, Edward Washburn; Sergeant-at-Arms, John De Vries.

Board of Managers: Horace H. Smith, Paul A. Oldam, Wm. T. Maguire.

Mr. Haddow was given the honor to install the officers which he did in a very appropriate manner.

Our new Librarian, Edward Washburn, started his new office by conducting a Question Box. He has asked the members to bring as many problems as possible to our next regular meeting.

Thirty-eight members attended this meeting.

There being no further business the meeting was adjourned at 11:15 P. M.

GEORGE WAGNER, *Secy.-Treas.*

CHICAGO BRANCH

The regular monthly meeting of Chicago Branch was held Friday, June 4, 1943, at the Atlantic Hotel.

President R. J. Hazucha presiding and all other Officers present.

In the absence of our librarian Mr. Krentel, the guest librarian for this evening was Mr. V. Mattacotti who introduced the Speaker of the evening Mr. W. S. Morrison of the Illinois Water Treatment Co. of Rockford, Illinois. Mr. Morrison made a very interesting and instructive talk on "De-Ionized Water for the Plating Room" this was something new and many interesting points were brought out in the long discussion that followed Mr. Morrison's talk.

There were 68 in attendance and the meeting adjourned at 10:40 P. M.

J. W. HANLON, *Secretary*

MONTREAL BRANCH

The regular monthly meeting of the Montreal Branch A.E.S. was held at the

Mount Royal Hotel on Monday, June 14th. The meeting was called to order by the chairman at 8:15 P. M. The minutes of the previous meeting were read and accepted as read.

It was moved and seconded that Mr. E. Feeley be appointed chairman of the membership committee.

The report of the delegates present at the convention was called for but owing to the absence of the three delegates from our meeting this was laid over to our next meeting. An incomplete report was heard from the alternative delegates, two of whom were present.

Mr. C. Douglas of Montreal Branch again distinguished himself and the branch by bringing home a first prize blue ribbon for his human interest photograph, "The Secret Formula." It was moved by Mr. E. Feeley, seconded by Mr. R. Gordon, that Mr. Douglas be given a vote of thanks for the able manner in which the photograph was taken and mounted.

Mr. Wm. Gauvin was asked by the chairman to prepare a short paper on elementary electrochemistry to be presented at our July meeting. Meeting adjourned at 10:30 P. M.

WM. G. FINLAY, *Secy.-Treas.*

LOS ANGELES BRANCH

The Los Angeles Branch held its regular monthly meeting June 7 at the Elks Club, 607 S. Parkview.

The meeting was called to order by President E. R. Holman.

The following visitors were introduced: First Sergeant Alfred Stricker and Mr. Savage.

Mr. Bruno Schindler was welcomed back after 15-month absence.

Minutes and financial reports were read and approved with the exception of a correction in the minutes pertaining to our visitors of last month. They should have read Mr. Huppert of the Green Electric Co.

Letters were read from Mr. K. R. Solivan and Mr. Carl Weber asking for resignation. They were turned over to the Board of Managers.

Mr. Wiseman's transfer from the Grand Rapids Branch was read and he was welcomed as a member of the Los Angeles Branch.

ACID AND ALKALI PROOF LININGS AND MORTARS

•

ACID PROOF CONSTRUCTION

•

THE CEILCOTE CO.

Consulting and Research Engineers

750 ROCKEFELLER BLDG.
CLEVELAND, OHIO

"Pur-Blac"

The Black Oxidized finish that penetrates Iron & Steel Surfaces

•

ECONOMICAL Inexpensvie equipment with minimum procedure.

CORROSION RESISTANT Will stand a 100 hour salt spray test.

NO CHANGE IN DIMENSIONS Parts remain same size after treatment.

NON - TECHNICAL Temperatures not critical. Analytical control not necessary.

PERFECTLY UNIFORM Beautiful ebony finish maintained throughout.

Write for descriptive folder

THE PURITAN MFG. CO.
Waterbury, Conn.

President E. R. Holman appointed a program committee to assist the librarian, Mr. Earl Coffin. They were: E. W. Wells, Frank Bunker and James ApRoberts.

It was moved and carried that Mr. E. Lamoureux send a telegram of congratulation to convention held at Buffalo.

It was voted to hold the Annual Picnic July 25th, to which $50.00 was contributed for expenses. Mr. Stanley Rynkoff was appointed chairman. He appointed E. W. Wells, John Merigold and James ApRoberts to assist him.

Mr. E. Lamoureux announced that he would award a gold medal to the best paper presented to the Branch for the coming year. This is for members of the Los Angeles Branch only. He reserves the right to pick his own judges in selecting the paper.

The meeting was turned over to the librarian, Mr. Earl Coffin, who introduced Mr. Frank Bunker. Mr. Bunker gave a very interesting talk on Electro Pickling and the Bullard, Dunn process. He also exhibited some Saran and Koroseal samples used for tank lining in place of rubber.

Meeting adjourned 10:45.

C. C. MCLAREN, *Secy.*

MONTREAL BRANCH

The regular meeting of the Montreal Branch A.E.S. was held on Monday, May 3rd, at the Mount Royal Hotel. The meeting was called to order at 8:15 P. M. with the reading of the minutes of the last meeting. These were adopted as read.

The delegates to the convention were instructed to vote against the constitutional amendment on the grounds that such an amendment would only serve to increase membership without benefit to the Society as an electroplaters' organization. On other matters arising at the convention the delegates were to vote in the best interests of the Society.

The officers of the new year were installed in office by our old friend John H. Feeley as follows: President, J. Reisenburg; 1st vice pres., H. Downs; 2nd vice pres., Wm. Gauvin; 3rd vice pres., E. Feeley; secy.-treas., Wm. G. Finlay; board of managers, C. Douglas, R. Davidson, T. W. Day.

The resignation of Mr. S. Dembicki was read, moved and accepted.

The meeting was then turned over to our librarian and the questions asked were sufficient to keep us to a late hour.

Meeting adjourned at 11:15 P. M.

WM. G. FINLAY, *Secy.-Treas.*

BOSTON BRANCH

Boston Branch met Thursday, June 3rd, at the Statler Hotel, Boston, with Pres. Swift in the chair.

Minutes of the previous meeting read and approved. Communications read and placed on file. Bills read and ordered paid.

Richard R. Roscoe, 56 Freeman Street, Wollaston, Mass., was reinstated as active.

One application was read and approved by the board of managers and elected to membership Fredrick D. Burney, 20 Claremont Park, Boston, Mass., associate.

The Secretary was instructed to write the Supreme Secretary requesting that all members of the American Electro-Platers Society in the service of the U. S. A. and other countries be placed on an honor roll and published in the Review every month until they all come home.

The following officers were elected for the coming year: president, George P. Swift; 1st vice president, Leonard A. Chesworth; 2nd vice president, Robert L. Smith; secretary-treasurer, Andrew W. Garrett; librarian, Robert Magnuson; board of managers, Charles O. Hardy; chairman, William Jones, and James N. Kempt; sergeant-at-arms, Colgate Gilbert.

Lou Gagnon introduced the speaker of the evening, Mr. F. P. Hunsicker of Westinghouse Electric Co.; his talk was "Micarta and Its Applications in the Plating Industry." He explained how micarta was made and gave a demonstration in its first stages; he showed samples and answered all questions for the members and was given a rising vote of thanks for a very fine talk.

Meeting adjourned at 10:30 P. M.

A. W. GARRETT, *Secy.-Treas.*

SPRINGFIELD BRANCH

The regular monthly meeting of the Springfield Branch, American Electroplaters' Society, was held on May 24th at the Hotel Charles in Springfield, Mass. The meeting was called to order by President Prouty. The minutes of the previous meeting were read and approved.

The secretary read a letter from Acting Secretary E. T. Candee explaining that the shortage of paper had necessitated eliminating the Convention Delegate Cards, also that the Society is publishing Dr. S. S. Glasstone's "Fundamentals of Electrochemistry," which appeared in monthly installments in the *Monthly Review*, in book form.

Mr. Niles, Chairman of the Nominating Committee, again read the slate of nominees for the 1943-1944 branch officers. Mr. Paul Lyman was added to the slate as a candidate for Secretary and Treasurer. The following officers were elected for the coming year:

President, Norman Plank; Vice President, Arthur Zavarella; 1st Vice-President, William Hanford; Secretary and Treasurer, Derick Hartshorn; Assistant Secretary and Treasurer, Paul Lyman; Librarian, Frank J. Clark. Board of Directors, T. J. Murray, Harold Narcus, William Hanford.

The Secretary-Treasurer reported that there was a balance in the bank of $129.16 to date.

The Secretary read an application from Mr. William Ancrum of the Springfield Armory for Active Membership. The application was read and approved.

Mr. Prouty then introduced Mr. R. Watkins and Mr. Barne of the Zapon Co., Stamford, Conn. Mr. Watkins presented a very interesting talk entitled "Stop-Offs and Water Dip Lacquers." In his talk he touched on the availability of some of the ingredients which are used in lacquers and thinners. He also eplained the progress which is being made in the organic finishing field and told us what we can expect after the war is over.

Mr. Watkins' talk was thoroughly enjoyed and he was given a rising vote of thanks.

Refreshments were served in the room and the meeting adjourned at 11:00 p.m.

D. S. HARTSHORN, *Secretary*

FOR SPEED TO MEET THE SCHEDULE !
Hammond
BURRING, BRUSHING, POLISHING MACHINES FOR
PLANE PARTS • BOMB PARTS
SHELLS • GUN BARRELS
TANK PARTS
"J" Rotary AUTOMATIC (or Strait-Line) Burring, Brushing Polishing, Buffing
"VRO" Polishers 3 to 7½ HP. Other Lathes: Models 1 to 50 HP. for every application
Hammond Machinery Builders INC.
KALAMAZOO • MICHIGAN
1664 DOUGLAS AVENUE
Eastern Branch, 71 W. 23 St., New York 10, N.Y.

NEW Equipment Materials Supplies

ROTO-FINISH

New Deburring Equipment

Sturgis Products Company are the manufacturers of this new, unique mechanical method of deburring, buffing, honeing, grinding and polishing parts made of practical all metals.

Roto-Finish will handle much of the finest precision work produced in the manufacture of airplane parts, machine guns, and other war production parts.

The process is available in either the wet or dry. The Wet Process is especially designed to handle heavy gauge stampings, large irregularly shaped parts; or where a particularly smooth, bright finish is required. The Dry Process can be used advantageously for handling brass castings, light gauge steel and brass stampings and die cast pieces before plating. It effectively smooths the surface and edges through an abrasive action, and at the same time imparts a bright finish due to the coloring properties of the Dry Finishing Compound.

The Roto Jr. is designed for those plants where the size and quantity of the work is too small for the larger units.

Frederic B. Stevens, Inc., of Detroit, distributors for Roto-Finish, report a growing demand for this type of equipment.

MACDERMID PICKLING CONTROL

MACDERMID INCORPORATED offer three additives, the materials and their characterictics are as follows:

Inhibitex #1 is a pure inhibitor. The recommended quantity is 6-10 ounces per 100 gallons of acid solution. The amount of attack by the acid on steel is reduced to 1/2 of 1% of the amount of attack by the same acid which contains no Inhibitex. Inhibitex #1 is recommended as an economical inhibitor, especially for rust removal, stripping of zinc plate and non-oily scale.

Inhibitex #2 combines a powerful wetting action with the strong inhibitive action. For maximum results up to 16 ounces of Inhibitex #2 per 100 gallons of acid solution is recommended. Inhibitex #2 is recommended wherever a powerful wetting and emulsifying action is desired as well as an inhibitor. Jobs especially suitable for Inhibitex #2 are the pickling of small parts in baskets and the removal of oily scales, such as oil quenched parts.

Both Inhibitex #1 and #2 are dry powders. Additions may be made by scattering the required amount on the surface of the acid and stirring thoroughly. Additions may also be made by adding to a small quantity of hot acid – which is then poured into the acid pickle.

Metex Acid Additive is used to speed up attack on scale and rust by its rapid wetting action. A foam blanket is produced which eliminates undesirable acid spray. Metex Acid Additive is a red liquid, one to two quarts of which are sufficient for 100 gallons of acid solution. Metex Acid Additive is satisfactory for use in Bullard-Dunn processing tanks. To use simply pour the proper quantity into the acid and stir.

Precise control for all types of pickling operations is possible only by a proper selection of materials. MACDERMID service engineers can assist you in the proper choice.

U. S. STONEWARE RECOMMENDS PROCEDURE FOR PROTECTION OF PLATING RACKS, HOOKS, ANODE BARS, ETC.

"TYGON TAPE"—Plating racks, hooks, etc., should be spirally wound allowing ½ to ⅓ over-lap. Wrap tightly and anchor end with cord or wire. After winding entire surface should be coated with Tygon Paint TP-21. If possible force-dry at 175 degrees F for 40 to 60 minutes

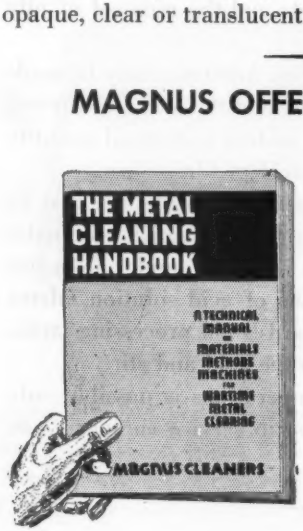
after initial air dry period of 2 to 3 hours in order to eliminate all paint solvents. Hook or rack may then be placed in service.

"TYGON GEL"—Many platers prefer Tygon Gel, with or without cotton-gauze under-wrapping for coating hooks or racks. First heat Gel to about 290 degrees F. Because of inflammable ingredients in Gel heating must be done in steam-heated or oil bath in porcelain or aluminum pot of sufficient size to permit dipping of articles to be coated. Three to five dips are recommended each coating being thoroughly dried before applying next. Coating is thick and gives a tight, shrink fit.

"TYGON PAINT"—When temporary protection only is desired (for 2 or 3 plating cycles) a single coat of Tygon TP-21 may be used. After one or two plating cycles, entire film may be stripped and washed with water jet.

"TYGON TEMPRO-TEC"—An excellent, readily-strippable masking material for plating operations. Many standard colors available in opaque, clear or translucent formulations. Applied by brush or spray.

MAGNUS OFFERS CLEANING HANDBOOK



The Magnus Chemical Company, Inc., manufacturers of Metal Cleaning Materials, Metal Drawing Lubricants and Washing, Drying and Pickling Equipment, has just issued a new 72-page illustrated manual, "THE METAL CLEANING HANDBOOK".

The handbook provides an organized means of selecting cleaning materials, methods of use and types of washing equipment best adapted to efficient cleaning of various kinds and shapes of metal articles.

Copies may be obtained by writing Magnus Chemical Co., Dept. M.R., Garwood, N. J.

NEW CONTROL FILLS LONG FELT NEED

A new automatic tank controller, recently placed on the market by Plating Processes Corporation of Holyoke, Mass., created widespread interest at the A.E.S. Convention.

Tested for several months under severe conditions, Plating Processes Corporation withheld announcement of this new instrument until its potentialities had been proved.

Simple in principle, yet uncanny in the things it will do. Automatically maintains a predetermined solution level, controlling temperature whether the solution has a tendency to heat or to cool. The temperature control section is based on an entirely new principle.

Warning signals at tank and in watchman's station, afford a constant record of activity. Also designed to provide automatic starting and stopping.

A number of electroplaters have seen this automatic controller in operation under service conditions, and are unanimous in their praise.

It is being marketed in various models to fit a wide range of requirements.

GETTING PERSONAL — Cont. from page 641

The candid camera proves it's not all work handling a Convention. What say Charlie Logan?

• •

The "Met" hasn't had a top-flight tenor since Caruso. Talent scouts passed up a good bet in not covering the A.E.S. Convention. Paging Tom Slattery.

• •

One speaker at the Victory Luncheon suggested more of us get back to the soil. Is he suggesting the technique often used by politicians?

• •

Joe Ruff wants to know, "Who is this guy Fred Astaire"?

• •

Orchids to our Orchideous Stenotypist.

• •

Question: Did the banquet speeches wake up the chap parading in the nightshirt or prompt his search for the arms of Morpheus?

• •

Do you suppose Cleveland Branch can top 1,000 registration in 1944?

• •

There is probably nothing to this rumor that Schiaparelli and Adrian have taken jobs as welders at Curtis Wright after viewing the stunning evening gowns worn by Mrs. Conley and Mrs. Caldwell.

• •

The glass blowing demonstration for the ladies was so popular they could not get near it for the men. All New York subway riders no doubt.

BOOK DEPARTMENT

BOOK REVIEWS

By

DR. GEORGE DUBPERNELL, *United Chromium, Inc.*

THE FUNDAMENTALS OF ELECTROCHEMISTRY AND ELECTRODEPOSITION

By SAMUEL GLASSTONE

Published by The American Electroplaters' Society

545 Fifth Avenue, New York City, 1943. Price $2.00

The appearance of this simplified textbook of Electrochemistry by Professor Glasstone is an event of primary importance in the progress of the A.E.S. from two points of view. First and foremost, it means that there is now available an excellent elementary textbook for platers' classes and for individual study. Second, it marks the beginning of the publication of a projected series of low-priced manuals or monographs on a large number of subjects connected with electroplating and metal finishing.

The book is a reprint, with additions and corrections, of the series of articles which have appeared in the *Monthly Review* from July 1941 to June 1943. Together, these articles form a very valuable textbook. It contains a discussion of all the more important topics connected with electrodeposition, presented in a unique, smooth-reading, realistic fashion that could hardly be accomplished by anyone but Professor Glasstone. Each topic is fully treated consistent with the needs of electroplaters, in spite of the brevity which has been accomplished. Only twice in a reading of the book did the reviewer become aware of a loose end which had been neglected. Once was when the author failed to explain how a copper strike could be used in nickel plating zinc, and the second time was when the last section of the book on the Prevention of Corrosion by Electroplating did not include any discussion of anodic coatings such as zinc and cadmium. These are minor omissions however, and the book is a very satisfactory text of what is commonly a very abstruse subject. Professor Glasstone has done a remarkably fine job of writing up the subject in plain, understandable English. He states in his

preface that . . . "an elementary knowledge of chemistry and physics had to be assumed," . . . but he seldom seems to demand such knowledge on the part of the reader. Even his treatment of the mathematics of electrochemistry and some of its calculations is so simplified and aided by the use of examples, as to appeal to a non-mathematically minded reader. In this as well as other respects the book is suitable for home study by the ambitious individual, in addition to being satisfactory for classroom work.

The great range of subjects covered is indicated by the chapter headings which are as follows: The Formation of Simple Ions, Complex Ions, Ions in Solutions, The Conductivity of Solutions, Quantity of Electricity and Faraday's Laws, Current Efficiency, The Ionization of Water and the Significance of pH, The Determination of pH Values by Electrometric Methods, The Theory of pH Indicators, Buffer Solutions, The Significance of Reversible Electrode Potentials, The Standard Potential, The Displacement of Metals, The Deposition Potentials of Metals, Hydrogen Overvoltage, Concentration Polarization and the Diffusion Layer, Electrolysis of Complex Cyanide Solutions, Conditions Affecting the Form of Electrodeposited Metals, The Behavior of Anodes: Passivity, The Causes and Prevention of Corrosion.

In spite of the brevity and simplicity of most of the book, the reviewer feels that perhaps too much space was devoted to pH and its measurement. However, any readers already having some knowledge of pH with which they are content, can easily skip some parts. This is facilitated by the use of very numerous sub-headings; almost every paragraph has an indicative title.

A.E.S. BOOK DEPARTMENT

I enclose $..... in payment for the following books, to be sent to me postage prepaid: (This offer good only in U. S. A.)

.....

.....

.....

NAME .....

STREET .....

CITY ..... STATE .....

Please quote me prices on the following books not listed on this page:

MEMBERSHIP REPORT

CLARENCE C. HELMLE

Chairman, Membership Committee

To July, 1943

ELECTIONS

Boston Branch

FREDERICK DOUGLAS BURNEY, 20 Claremont Park, Boston, Mass.

RICHARD ROY ROSCOE (reinstated) 56 Freeman St., Wollaston, Mass.

Bridgeport Branch

GERALD DE ROSA, 169 Weber St., Bridgeport, Conn., Active.

CHARLES R. SEISER, 30 Minor Cross, Stratford, Conn., Active

Chicago Branch

R. H. JACOBY, 3462 N. Whipple St., Chicago, Ill., Active

JOHN GRIESMANN, 4408 N. Keeler Ave., Chicago, Ill., Associate

C. F. HANSEN, 1039 Hollywood Ave., Chicago, Ill., Associate

E. E. HAWKINSON, c/o Metal Finishing Service, 333 N. Michigan Ave., Chicago, Ill., Associate

G. O'CONNELL, c/o Matchless Metal Polish Co., Chicago, Ill., Associate, 840 W. 49 Place

C. W. CARTER, 1033 W. Van Buren St., Chicago, Ill., Associate

Cleveland Branch

EUGENE W. HAUCK, 1863 West 27 St., Cleveland, Ohio, Active

JOSEPH L. UNOCIC, c/o Ohio Crankshaft, Inc., 3800 Harvard Ave., Cleveland, Ohio, Active

Indianapolis Branch

WILLIAM K. CLARK, 107½ Jackson St., Columbus, Indiana, Active

FRANCIS E. SKELLY, R. R. No. 3, Tipton, Indiana, Active

WAYNE M. GAUNTT, 2533 Sherman Ave., Evansville, Inc., Active

MAURICE R. HAWKINS, 231 N. Tremont St., Indianapolis, Inc., Active

EMORY CHARLES GUERIN, McClelland Casket Hardware Co., P. O. Box 195, Richmond, Ind., Active

MARVIN O. CRAWFORD, 809 Security Trust Co., Indianapolis, Ind., Associate

HAROLD H. LURIE, 429 Pearl St., Columbus, Ind., Associate

Lancaster Branch

IRA C. ROHM, 414 Fremont St., Lancaster, Pa.

Newark Branch

SIDNEY L. BOYAR, 308 W. 21 St., New York, N. Y., Associate

OLIVER O. BRANT, 85 Beekman Rd., Summit, N. J., Associate

ROLAND J. HOLDEN, 58 Steuben St., East Orange, N. J., Associate

RUDOLPH JACOB, Automatic Winding Co., 900 Passaic Ave., E. Newark, N. J., Associate

ARTHUR S. KOHLER, 99 Maple St., Rutherford, N. J., Associate

JACK L. PETTIT, 149-155 Shaw Ave., Irvington, N. J., Associate

NICK PIEGARO, 26 Calumet St., Newark, N. J., Associate

MARVIN A. SCHWARTZ, Automatic Winding Co., Inc., 900 Passaic Ave., East Newark, N. J., Associate

ERWIN BALKE, 515 So. Clinton St., East Orange, N. J., (Shiman Mfg. Co.), Active

JOSEPH F. BOLISH, 177 Beechwood Drive, Packannack Lake, N. J., (Lacquer Finishing, Inc.), Associate

DAVID T. COOK, 1 Gouveneur St., Newark, N. J., (Western Electric Co., Inc.), Active

JOSEPH GRUSZKIEWICZ, 26 Thomas St., Bloomfield, N. J., (Walter Kidde & Co., Inc.), Associate

HOWARD F. JOHNSON, Lotte Chemical Co., Box 1537, Paterson, N. J., Associate

WALTER W. KEMPF, 110 Delawanna Ave., Delawanna, N. J., (Lacquer Finishing, Inc.), Associate

Philadelphia Branch

KENNETH E. LANGFORD, 22 Sandwell Road, West Bromwich, Staffs, England

E. RICHARD ZIEGENFUSS, 105 Perkasie Ave., West Lawn, Pa.

San Francisco Branch

F. W. Anderson, 5160 Claremont Ave., Oakland, Calif., Active

ALBERT BELL, 928 Trower St., Napa, Calif., Active

SHERMAN SCHROEDER, 218 Cascade St., Chalot Terrace, Vallejo, Calif., Active

Toledo Branch

ROGER LINDSAY, Harshaw Chemical Co., 1945 E. 97th St., Cleveland, Ohio, Associate (reinstated)

Toronto Branch

JAS. A. HESLIN, 10 Crofton Rd., Leaside, Toronto, Ont., Canada, Associate

F. N. OAKLEY, 10 Duchess St., Toronto, Ont., Canada, Associate

H. V. BUNTING, 68 Benson Ave., Toronto, Ont., Canada, Associate

E. P. BLANDY, Small Arms Ltd., Long Branch, Ont., Canada, Associate

Waterbury Branch

PERRY J. SLOANE, 244 Cooke St., Waterbury, Conn., Associate

LESLIE E. HEENE, 836 N. Beckley Ave., Dallas, Texas, Active

APPLICATIONS

Chicago Branch

T. MORAN, 4360 Shields Ave., Chicago, Ill., Active

P. WOODSON, 1308 N. La Salle St., Chicago, Ill., Active

R. POPULORUM, 3745 Diversey Ave., Chicago, Ill., Active

C. F. BELL, JR., 4705 Palmer St., Chicago, Ill., Associate

J. J. CHABALA, 1701 Wellington St., Chicago, Ill., Associate
c/o Appleton Electric Co.

Cleveland Branch

JOSEPH F. KRAMER, 3154 West 73rd St., Cleveland, Ohio, Active

Dayton Branch

RALPH E. COLLINS, 819 West Columbia, Springfield, Ohio, Active

Philadelphia Branch

A. H. OKAMOTO, Active

Pittsburgh Branch

CHARLES W. DERMITT, 957 Woodbourn Ave., Pittsburgh, Pa., Associate

Toronto Branch

JAMES BIDEN, 332 Sammon Ave., Toronto, Ont., Canada, Associate

SUSPENSIONS

Chicago Branch

V. S. BROUSE, 3634 Douglas Rd., Douglaston, N. Y.
E. J. BREWER, 41 Armitage Ave., R. R. No. 1, Melrose Park

Cleveland Branch

Harold Trambicki, 3865 Woodridge Rd., Cleveland Hts., Ohio

Toledo Branch

CHARLES ADAMSKI, Box 507 R. R. No. 4, Toledo, Ohio

Waterbury Branch

E. ALFRED ELLINGSEN, 1700 15th St., Denver, Colo., Associate
ROY A. ANDERSON, 1 Central Ave., Waterbury, Conn., Associate

RESIGNATIONS

W. TALL, Chicago Branch
JOSEPH ZANG, Dayton Branch
K. R. SOLIVAN, Los Angeles Branch
CARL WEBER, Los Angeles Branch

DEATHS

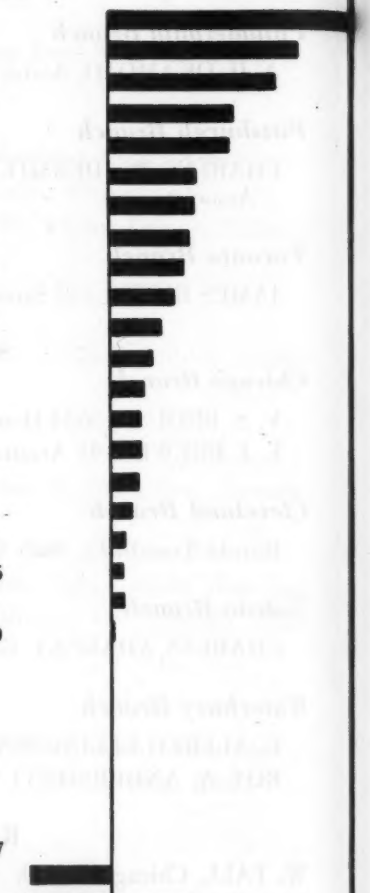
PHILIP SIEVERING, Newark Branch

TRANSFERS

J. C. LOCKERBIE from Chicago Branch to Cincinnati Branch

MEMBERSHIP CHART

BRANCH	May 1942	Change in Membership	Percent Change
ST. LOUIS	83	+20	+24.1
CINCINNATI	49	+ 8½	+17
INDIANAPOLIS	57	+ 8½	+14.9
GRAND RAPIDS	94	+10½	+11.1
BUFFALO	60	+ 6½	+10.8
SAN FRANCISCO	50	+ 4	+ 8
SPRINGFIELD	70	+ 5½	+ 7.8
NEWARK	174	+13	+ 7.4
TORONTO	105	+ 7	+ 6.6
BALT.-WASHINGTON	103	+ 6	+ 5.8
HARTFORD	73	+ 3½	+ 4.7
NEW YORK	137	+ 5	+ 3.6
CLEVELAND	99	+ 3	+ 3
TOLEDO	36	+ 1	+ 2.7
WATERBURY	109	+ 3	+ 2.7
BOSTON	119	+ 3	+ 2.5
NEW HAVEN	103	+ 2	+ 1.9
CHICAGO	278	+ 3½	+ 1.2
MILWAUKEE	94	+ 1	+ 1.06
PHILADELPHIA	135	+ 2	+ 1.4
LOS ANGELES	127	+ ½	+ .39
BRIDGEPORT	82	...	...
MONTREAL	41	...	...
PITTSBURGH	56	...	...
PROV.-ATTLEBORO	49	...	...
ROCHESTER	86	...	...
SYRACUSE	49	...	...
DETROIT	282	— ½	— .17
LANCASTER	40	— 3	— 7.5
ANDERSON	32	— 2½	— 7.8
DAYTON	98	— 9	— 9.1



MEMBERSHIP — May 1st, 1943 = 2970
MEMBERSHIP — July 1st, 1943 = 3072
GAIN IN MEMBERSHIP = 102
Percent of Gain 3.4%

BUYERS' GUIDE

ABRASIVES

Divine Brothers Co., Utica, N. Y.
Harrison & Co., Haverhill, Mass.
Lasalco, Inc., St. Louis, Mo.
Lea Mfg. Co., Waterbury, Conn.
Norton Company, Worcester, Mass.
Roberts Rouge Co., Stratford, Conn.

ACTIVATED CARBONS

Darco Corporation, New York City
Industrial Chemical Sales, New York City

ALKALI CLEANING COMPOUNDS

Detroit Rex Products Co., Detroit, Mich.
Enthone Co., New Haven, Conn.
Gumm, Frederick, Chemical Co., Inc., Kearny, N. J.
Hanson-Van Winkle-Munning Co., Matawan, N. J.
Lasalco, Inc., St. Louis, Mo.
MacDermid, Inc., Waterbury, Conn.
Magnus Chemical Co., Garwood, N. J.
Magnuson Products Corp., Brooklyn, N. Y.
Oakite Products Inc., New York City
Pennsylvania Salt Mfg. Co., Philadelphia, Pa.
Wyandotte Chemicals Corp., Wyandotte, Mich.

ANODES, ACIDS AND SALTS

Apothecaries Hall Co., Waterbury, Conn.
du Pont, E. I., de Nemours & Co., Inc., Wilmington, Del.
Hanson-Van Winkle-Munning Co., Matawan, N. J.
Harshaw Chemical Co., The, Cleveland, Ohio
Lasalco, Inc., St. Louis, Mo.
Preciment Laboratories, New York City
Pennsylvania Salt Mfg. Co., Philadelphia, Pa.

ANODES, ACIDS AND SALTS

Stevens, Frederic B., Inc., Detroit, Mich.
Stutz, George A., Mfg. Co., Chicago, Ill.
Udylite Corp., The, Detroit, Mich.

ANODES—CHROMIUM PLATING

Enthone Co., New Haven, Conn.
Hanson-Van Winkle-Munning Co., Matawan, N. J.
Harshaw Chemical Co., The, Cleveland Ohio
Heil Engineering Company, Cleveland Ohio
Lasalco, Inc., St. Louis, Mo.
McGean Chemical Co., Cleveland, Ohio
Seymour Mfg. Co., Seymour, Conn.
Stevens, Frederic B., Inc., Detroit, Mich
Storts Welding Co., Meriden, Conn.
Stutz, George A., Mfg. Co., Chicago, Ill.
Udylite Corp., The, Detroit, Mich.
United States Stoneware Co., The, Akron, Ohio.

ANODES—COPPER

American Brass Co., Waterbury, Conn.
du Pont, E. I., de Nemours & Co., Inc., Wilmington, Del.
Hanson-Van Winkle-Munning Co., Matawan, N. J.
Harshaw Chemical Co., The, Cleveland, Ohio
Lasalco, Inc., St. Louis, Mo.
McGean Chemical Co., Cleveland, Ohio
Seymour Mfg. Co., Seymour, Conn.
Stevens, Frederic B., Detroit, Mich.
Stutz, George A. Mfg. Co., Chicago, Ill.
Udylite Corp., The, Detroit, Mich.

ANODES—ELECTRIC CLEANER

Lasalco, Inc., St. Louis, Mo.
Storts Welding Co., Meriden, Conn.
Stutz, George A., Mfg. Co., Chicago, Ill.

BUYERS' GUIDE

ANODES—NICKEL

Seymour Mfg. Co., Seymour, Conn.

ANODES—ZINC

du Pont, E. I., de Nemours & Co., Inc., Wilmington, Del.
Hanson-Van Winkle-Munning Co., Matawan, N. J.
Harshaw Chemical Co., The, Cleveland, Ohio
Lasalco, Inc., St. Louis, Mo.
Meaker Company, The, Chicago, Ill.
Seymour Mfg. Co., Seymour, Conn.
Stevens, Frederic B., Inc., Detroit, Mich.
Stutz, George A., Mfg. Co., Chicago, Ill.
Udylite Corp., The, Detroit, Mich.

BALL ANODES

du Pont, E. I., de Nemours & Co., Inc., Wilmington, Del.
Hanson-Van Winkle-Munning Co., Matawan, N. J.
Lasalco, Inc., St. Louis, Mo.
Stutz, George A., Mfg. Co., Chicago, Ill.
Udylite Corp., The, Detroit, Mich.

BUFFS AND BUFFING COMPOSITIONS

Advance Polishing Wheels, Inc., Chicago, Ill.
Apothecaries Hall Co., Waterbury, Conn.
Burns, E. Reed, Corp., Brooklyn, N. Y.
Divine Brothers Co., Utica, N. Y.
Gumm, Frederick, Chemical Co., Inc., Kearny, N. J.
Hanson-Van Winkle-Munning Co., Matawan, N. J.
Harrison & Co., Haverhill, Mass.
Kocour Co., 4724 South Christiana Ave., Chicago, Ill.
L'Hommedieu, Chas. F., & Sons, Co., Chicago, Ill.
Lasalco, Inc., St. Louis, Mo.
Lea Mfg. Co., Waterbury, Conn.
MacDermid, Inc., Waterbury, Conn.
Matchless Metal Polish Co., Glen Ridge, N. J., and Chicago, Ill.
Puritan Mfg. Co., Waterbury, Conn.
Roberts Rouge Co., Stratford, Conn.
Stevens, Frederic B., Detroit, Mich.

BUFFS AND BUFFING COMPOSITIONS

The Buckingham Products Co., Detroit, Michigan
Stutz, George A., Mfg. Co., Chicago, Ill.
Udylite Corp., The, Detroit, Mich.
United Laboratories, Linden, N. J.
The Buckingham Products Co., Detroit, Michigan

BURNISHING BARRELS AND BALLS

Abbott Ball Co., Hartford, Conn.
Baker, M. E., Co., Cambridge, Mass.
Hanson-Van Winkle-Munning Co., Matawan, N. J.
Lasalco, Inc., St. Louis, Mo.
Magnuson Products Corp., Brooklyn, N. Y.
Storts Welding Co., Inc., Meriden, Conn.

BURNISHING COMPOUNDS

Ford, J. B., Co., The, Detroit, Mich.
Gumm, Frederick, Chemical Co., Inc., Kearny, N. J.
Lasalco, Inc., St. Louis, Mo.
Magnus Chemical Co., Garwood, N. J.
Oakite Products, Inc., New York City

CADALYTE PLATING MATERIALS "CARBONATE REMOVER"

du Pont, E. I., de Nemours & Co., Inc., Wilmington, Del.
Lasalco, Inc., St. Louis, Mo.

CADMIUM SERVICE

Hanson-Van Winkle-Munning Co., Matawan, N. J.
Udylte Corp., The, Detroit, Mich.

CADUX MATERIALS

Hanson-Van Winkle-Munning Co., Matawan, N. J.

CEMENT—GLUE SUBSTITUTE

Harrison & Co., Haverhill, Mass.

BUYERS' GUIDE

CEMENT POLISHING WHEEL

Divine Brothers Co., Utica, N. Y.
Harrison & Co., Haverhill, Mass.
Lasalco, Inc., St. Louis, Mo.
Lea Mfg. Co., The, Waterbury, Conn.

CHROMIUM SERVICE

Hanson-Van Winkle-Munning Co., Matawan, N. J.
United Chromium, New York City

CLEANERS AND CHEMICALS

Apothecaries Hall Co., Waterbury, Conn.
Blakeslee, G. S., & Co., Chicago, Ill.
Detroit Rex Products Co., Detroit, Mich.
du Pont, E. I., de Nemours & Co., Inc., Wilmington, Del.
Enthone Co., New Haven, Conn.
Gumm, Frederick, Chemical Co., Inc., Kearny, N. J.
Hanson-Van Winkle-Munning Co., Matawan, N. J.
Harshaw Chemical Co., The, Cleveland, Ohio
Lasalco, Inc., St. Louis, Mo.
Lea Mfg. Co., The, Waterbury, Conn.
MacDermid, Inc., Waterbury, Conn.
Magnus Chemical Co., Garwood, N. J.
Magnuson Products Corp., Brooklyn, N. Y.
McGean Chemical Co., The, Cleveland, Ohio
Meaker Company, The, Chicago, Ill.
Merck & Co., Inc., Rahway, N. J.
Norton Co., Worcester, Mass.
Oakite Products, Inc., New York City
Pennsylvania Salt Mfg. Co., Philadelphia, Pa.
Phillips Mfg. Co., 3463 N. Touhy Ave., Chicago, Ill.
Puritan Mfg. Co., Waterbury, Conn.
Stevens, Frederic B., Inc., Detroit, Mich.
Sulphur Products Co., Greensburg, Pa.
Udylite Corp., The, Detroit, Mich.
Wyandotte Chemicals Corp., Wyandotte, Mich.
Zialite Corporation, Worcester, Mass.

COILS—PLATING TANKS

Heil Engineering Company, Cleveland, Ohio
Lasalco, Inc., St. Louis, Mo.
Storts Welding Co., Meriden, Conn
United States Stoneware Co., The, Akron, Ohio.

DEGREASERS

Blakeslee, G. S., & Co., Chicago, Ill.
Detroit Rex Products Co., Detroit, Mich.
Mechanical Process, South Orange, N. J.
Phillips Mfg. Co., Chicago, Ill

EQUIPMENT

Alsop Engineering Corp., Milldale, Conn.
Blakeslee, G. S., & Co., Chicago, Ill.
Ceilcote Company, Cleveland, Ohio
Detroit Rex Products Co., Detroit, Mich.
Divine Brothers Co., Utica, N. Y.
Gumm, Frederick, Chemical Co., Inc., Kearny, N. J.
Hammond Machinery Builders, Kalamazoo, Mich.
Hanson-Van Winkle-Munning Co., Matawan, N. J.
Heil Engineering Co., Cleveland, Ohio
Industrial Filter & Pump Mfg. Co., Chicago, Ill.
Lasalco, Inc., St. Louis, Mo.
Lea Mfg. Co., The, Waterbury, Conn.
L'Hommedieu, Chas. F., & Sons Co., Chicago, Ill.
Meaker Co., The, Chicago, Ill.
Mechanical Process Company, South Orange, N. J.
Miller, J. C., Company, Grand Rapids, Mich.
Paasche Airbrush Company, Chicago, Ill.
Packer Machine Co., The, Meriden, Conn.
Phillips Mfg. Co., Chicago, Ill.
Stevens, Frederic B., Inc., Detroit, Mich.
Storts Welding Co., Meriden, Conn.
Stutz, George A., Mfg. Co., Chicago, Ill.
Udylite Corp., The, Detroit, Mich.
United Laboratories, Linden, N. J.
United States Stoneware Co., The, Akron, Ohio.

LEAD LINED TANKS

Hanson-Van Winkle-Munning Co., Matawan, N. J.
Heil Engineering Company, Cleveland, Ohio
Lasalco, Inc., St. Louis, Mo.
Storts Welding Co., Meriden, Conn.
Udylite Corp., The, Detroit, Mich.
United States Stoneware Co., The, Akron, Ohio.

BUYERS' GUIDE

MEAKER PROCESS GALVANIZING

Meaker Company, The, Chicago, Ill.

METAL LACQUERS AND FINISHES

Alrose Chemical Co., Providence, R. I.
Atlas Powder Co., Zapon Div., Stamford, Conn.
Egyptian Lacquer Mfg. Co., New York City
Heatbath Corporation, Springfield, Mass.
Maas & Waldstein Co., Newark, N. J.
New Wrinkle, Inc., Dayton, Ohio
Preciment Laboratories, New York City

METAL WORKING LUBRICANTS

Magnus Chemical Co., Garwood, N. J.
Oakite Products, Inc., New York City

OXIDIZING AGENTS

Enthone Co., New Haven, Conn.
Lasalco, Inc., St. Louis, Mo.
Mitchell-Bradford Chemical Co., Bridgeport, Conn.
Puritan Mfg. Co., Waterbury, Conn.
Sulphur Products Co., Greensburg, Pa.

PLATING BARRELS

Hanson-Van Winkle-Munning Co., Matawan, N. J.
Lasalco, Inc., St. Louis, Mo.
Lea Mfg. Co., The, Waterbury, Conn.
Stevens, Frederic B., Inc., Detroit, Mich.
Stutz, George A., Mfg. Co., Chicago, Ill.
Udylite Corp., The, Detroit, Mich.

PLATING TANKS

Hanson-Van Winkle-Munning Co., Matawan, N. J.
Heil Engineering Company, Cleveland, Ohio
Lasalco, Inc., St. Louis, Mo.
Stevens, Frederic B., Inc., Detroit, Mich.
Storts Welding Co., Meriden, Conn.

PLATING TANKS

Enthone Co., New Haven, Conn.
Stutz, George A., Mfg. Co., Chicago, Ill.
Udylite Corp., The, Detroit, Mich.
U. S. Stoneware Co., New York City

POLISHING LATHES

Baker, M. E., Co., Cambridge, Mass.
Divine Brothers Co., Utica, N. Y.
Gumm, Frederick, Chemical Co., Inc., Kearny, N. J.
Hammond Machinery Builders, Kalamazoo, Mich.
Hanson-Van Winkle-Munning Co., Matawan, N. J.
Lasalco, Inc., St. Louis, Mo.
L'Hommedieu, Chas. E., & Sons Co., Chicago, Ill.
Stevens, Frederic B., Detroit, Mich.
Stutz, George A., Mfg. Co., Chicago, Ill.
Udylite Corp., The, Detroit, Mich.

PLATING—PRECIOUS METALS

Baker & Co., Inc., Newark, N. J.
Merck & Co., Rahway, N. J.
Spectranome, New York City

POLISHING WHEELS AND MATERIALS

Advance Polishing Wheels, Inc., Chicago, Ill.
Baker, M. E., Co., Cambridge, Mass.
Burns, E. Reed, Brooklyn, N. Y.
Divine Brothers Co., Utica, N. Y.
Gumm, Frederick, Chemical Co., Inc., Kearny, N. J.
Hanson-Van Winkle-Munning Co., Matawan, N. J.
Lasalco, Inc., St. Louis, Mo.
L'Hommedieu, Chas. E., & Sons Co., Chicago, Ill.
Matchless Metal Polish Co., The, Glen Ridge, N. J., and Chicago, Ill.
Miller, J. C., Co., Grand Rapids, Mich.
Puritan Mfg. Co., Waterbury, Conn.
Roberts Rouge Co., Stratford, Conn.
Stevens, Frederic B., Detroit, Mich.
Stutz, George A., Mfg. Co., Chicago, Ill.
The Buckingham Products Co., Detroit, Michigan
Udylite Corp., The, Detroit, Mich.
United Labortories, Linden, N. J.

BUYERS' GUIDE

ROUGES

Divine Brothers Co., Utica, N. Y.
Hanson-Van Winkle-Munning Co., Matawan, N. J.
Harrison & Co., Haverhill, Mass.
Lasalco, Inc., St. Louis, Mo.
Matcheless Metal Co., Glen Ridge, N. J.
Roberts Rouge Co., Stratford, Conn.
Stevens, Frederic B., Detroit, Mich.
The Buckingham Products Co., Detroit, Michigan
Udylite Corp., The, Detroit, Mich.

RUBBER-LINED TANKS

Heil Engineering Co., Cleveland, Ohio
Lasalco, Inc., St. Louis, Mo.
Storts Welding Co., Meriden, Conn.
United States Stoneware Co., The, Akron, Ohio.

SOAPS

Hanson-Van Winkle-Munning Co., Matawan, N. J.
Lea Mfg. Co., The, Waterbury, Conn.
MacDermid, Inc., Waterbury, Conn.
Magnus Chemical Co., Garwood, N. J.
Magnuson Products Corp., Brooklyn, N. Y.
Oakite Products, Inc., New York City
Udylite Corp., The, Detroit, Mich.

SOLUTION CONTROL METHODS

du Pont, E. I., de Nemours & Co., Inc., Wilmington, Del.
Hanson-Van Winkle-Muning Co., Matawan, N. J.
Kocour Co., 4724 South Christiana Ave., Chicago, Ill.
Lasalco, Inc., St. Louis, Mo.

SOLVENTS—DEGREASING

Blakeslee, G. S., & Co., Chicago, Ill.
Detroit Rex Products Co., Detroit, Mich.
Lasalco, Inc., St. Louis, Mo.
Lea Mfg. Co., The, Waterbury, Conn.
MacDermid, Inc., Waterbury, Conn.
Magnus Chemical Co., Garwood, N. J.
Mechanical Process Co., South Orange, N. J.
Pennsylvania Salt Mfg. Co., Philadelphia, Pa.
Phillips Mfg. Co., Chicago, Ill.
Westvaco Chlorine Products Corp., New York, N. Y.

SOLVENTS RECOVERED

A. B. C. Chemical Co., Waterbury, Conn.

STRIPPING COMPOUNDS

Detroit Rex Products Co., Detroit, Mich.
du Pont, E. I., de Nemours & Co., Inc., Wilmington, Del.
Enthone Co., New Haven, Conn.
Gumm, Frederick, Chemical Co., Inc., Kearny, N. J.
MacDermid, Inc., Waterbury, Conn.
Magnus Chemical Co., Garwood, N. J.
Magnuson Products Corp., Brooklyn, N. Y.
Oakite Products, Inc., New York City
Sulphur Products Company, Inc., Greensburg, Pa.

TESTING INSTRUMENTS

American Instrument Co., Silver Spring, Md.
du Pont, E. I., de Nemours & Co., Inc., Wilmington, Del.
Harshaw Chemical Co., The, Cleveland, Ohio
Industrial Filter & Pump Mfg. Co., Chicago, Ill.
Kocour Co., Chicago, Ill.
Lasalco, Inc., St. Louis, Mo.

TUMBLING BARRELS

Abbott Ball Co., Hartford, Conn.
Baker, M. E., Co., Cambridge, Mass.
Lasalco, Inc., St. Louis, Mo.
Storts Welding Co., Meriden, Conn.

UDYLITE CADMIUM SERVICE

MacDermid, Inc., Waterbury, Conn.
Udylite Corp., The, Detroit, Mich.

USED EQUIPMENT

Baker, M. E., Co., Cambridge, Mass.

WASHERS—METAL PARTS

Blakeslee, G. S., & Co., Chicago, Ill.
Detroit Rex Products Co., Detroit, Mich.

BRANCH DIRECTORY

ANDERSON meets second Tuesday of every month at 7:30 p.m., at the Y. M. C. A. Anderson, Indiana. Secretary-Treasurer, E. L. McKinney, 2014 Fairview St., Anderson, Ind.

BALTIMORE-WASHINGTON meets at the Telford Buffeteria, 14th and Decatur Sts., N.W. Washington, D. C., the first Saturday of each month. Secretary-Treasurer, Abner Brenner, 6509 Fulton St., Chevy Chase, Md.

BINGHAMTON Secretary-Treasurer, Austin Fletcher, 406 Conklin Ave., Binghamton, N. Y.

BOSTON meets at the Hotel Statler, Boston, Mass., first Thursday each month. Secretary, A. W. Garrett, 77 Neponset Ave., Dorchester, Mass.

BRIDGEPORT meets first Friday of each month at Chamber of Commerce Rooms, Stratfield Hotel, Secretary-Treasurer, Joseph G. Sterling, 134 Colony St., Bridgeport, Conn.

BUFFALO meets second Friday of each month at Hotel Statler; Buffalo, N. Y. Secretary J. C. Mays, c/o Carborundum Co., Niagara Falls, N. Y.

CHICAGO meets second Friday of each month at 8 p.m., Atlantic Hotel, 316 S. Clark St. Secretary, J. W. Hanlon, 3004 N. Whipple St., Chicago, Ill.

CINCINNATI meets on Fourth Thursday of each month at 8 p.m., at Hotel Gibson, Cincinnati, Ohio. Secretary, Alcide E. Foreman, Rt. 9, Van Zandt Road, Box 313, Cincinnati, Ohio.

CLEVELAND meets first Saturday of each month at Cleveland Hotel. Secretary-Treasurer, G. B. Svenson, c/o Platers Supply Co., 2059 Hamilton Ave., Cleveland, Ohio.

DAYTON meets second Friday of each month at the Engineers Club, Dayton, Ohio. Secretary-Treasurer, W. M. Durnbaugh, R. R. 4 Xenia, Ohio.

DETROIT meets the first Friday of each month at the Hotel Statler. Secretary-Treasurer, F. L. Clifton, 16536 Inverness, Detroit, Mich.

GRAND RAPIDS meets second Friday of each month, 7:30 p.m., at the Browning Hotel. Secretary-Treasurer, C. E. Abel, 11 Scribner Ave., N.W., Grand Rapids, Mich.

HARTFORD meets third Monday of each month alternately at Hartford Electric Light Company, Hartford and at the Elks Club, corner South and Main Sts., Bristol, Conn. Special meetings are held at the New Britain Trade School, New Britain, Conn. Secretary-Treasurer, Savin Zavarella, 84 Darlin St., East Hartford, Conn.

INDIANAPOLIS meets at the Hotel Riley, the first Wednesday of each month. Secretary-Treasurer, Donald L. Patrick, 3145 North Illinois St., Indianapolis, Ind.

LANCASTER meets second Friday of each month at 8 p.m., at Thaddeus Stevens Industrial School, Lancaster, Pa. Secretary-Treasurer, W. H. Fordney, 603 Marietta Ave., Lancaster, Pa.

LOS ANGELES meets the first Monday of each month, 6:30 p.m. at the Elks Club, 607 S. Parkview Ave., Northwest corner opposite Westlake Park. Secretary-Treasurer, C. C. McLaren, 2236 Park. Secretary-Treasurer, Fred A. Herr, 322 S. Flower St., Los Angeles, Calif.

MILWAUKEE meets first Friday of each month at Republican Hotel, Secretary-Treasurer, James Durnford, 2370 N. 32nd St., Milwaukee, Wis.

MONTREAL meets first Monday of each month at Mount Royal Hotel, Montreal, Quebec, Canada. Secretary-Treasurer, W. G. Finlay, 5670 16th Ave., Rosemount, Montreal.

NEWARK meets first and third Friday of each month at Hotel Robert Treat, Newark, N. J., at 8 p.m. Secretary-Treasurer, George Wagner, 1130 So. Long Ave., Hillside, N. J.

NEW HAVEN meets the first Tuesday of each month at Sterling Chemistry Laboratory, Yale University. Secretary-Treasurer, Walter Lynch, 110 Peck St., New Haven, Conn.

NEW YORK meets second and fourth Fridays of each month, in the Hotel Pennsylvania, 7th Ave. and 33rd St., New York City, N. Y. Secretary-Treasurer, Franklyn MacStoker, 25 Princeton St., Garden City, L. I., N. Y.

PHILADELPHIA meets fourth Friday of each month, in the Harrison Laboratory Building, University of Pennsylvania, 34th and Spruce Sts. Secretary, Paul Mentzer, 7324 Tabor Ave., Philadelphia, Pa.

PITTSBURGH meets first Thursday of each month, at 8 p.m. at the Bureau of Mines Building, 4800 Forbes St., Pittsburgh, Pa. Secretary-Treasurer, Frank Keller, 1102 Hiland Ave., Coraopolis, Pa.

PROVIDENCE-ATTLEBORO meets at the Providence Biltmore Hotel the third Monday of each month. Secretary-Treasurer, Frederick E. Allen, 260 Fair Street, Edgewood Station, R. I.

ROCHESTER meets third Friday of each month at the Hotel Seneca. Secretary-Treasurer, Donald C. Blum, 672 Mt. Read Blvd., Rochester, N. Y.

SAN FRANCISCO meets the last Thursday of each month, usually at Angelo's, 4307 San Pablo Avenue, Oakland, Calif., Secretary-Treasurer, Arthur Kistler, 15th and Vermont Sts., San Francisco, Calif.

SPRINGFIELD meets the fourth Monday of each month at the Hotel Charles. Secretary-Treasurer, D. S. Hartshorn, Jr., 76 Edendale St., Springfield, Mass.

ST. LOUIS meets first Friday of each month at Central Y. M. C. A., 16th and Locust Sts., Secretary-Treasurer, C. T. McGinley, 8238 Monroe St., St. Louis, County, Mo.

SYRACUSE meets second Friday of each month at Bowne Hall, Syracuse University, Syracuse, N. Y. Secretary, George Simmons, 309 Park Ave., Herkimer, N. Y.

TOLEDO meets first Thursday of each month, in Room 201, of the Hilcrest Hotel, Toledo, Ohio. Secretary, Gaston Bergeman, 718 Howland St., Fremont, Ohio.

TORONTO meets second Friday of each month at Royal York Hotel. Secretary-Treasurer, E. B. Creighton, 468 Deloraine Ave., Toronto, Ont., Canada.

WATERBURY meets second Friday of the month at Elton Hotel. Secretary-Treasurer, Spencer L. Henn, Apothecaries Hall Co., Waterbury, Conn.

A. E. S. OFFICERS

President: GEORGE J. WAGNER . . . . . 1130 So. Long Ave., Hillside, N. J.
First Vice-President: MAURICE R. CALDWELL 2332 Everest, S.E., Grand Rapids, Mich.
Second Vice-President: CLARENCE C. HELMLE . . . . 302 Booth Hill Rd., Nichols, Bridgeport, Conn.
Third Vice-President: WALTER L. PINNER . Houdaille-Hershey Corp., Detroit, Mich.
Past President: CHARLES C. CONLEY . . . . . 900 Chestnut St., Sidney, Ohio
Executive Secretary: ELLSWORTH T. CANDEE . . . Box 791, Waterbury, Conn.

America's finest complete service

to the Plating, Polishing and Anodizing Plants

Part of Udylite's design and layout department where you may obtain the advice and assistance of experienced metal finishing engineers.

This is the laboratory where all Udylite products are developed and constantly tested under actual plant operating conditions.

UDYLITE has everything for the metal finishing plant. An Engineering Staff with years of practical experience to assist you in laying out your new plant or improving the efficiency of your present one.

Equipment for every need, that has proved its dependability in actual service records.

A very complete list of supplies second to none in quality. If you have a metal finishing requirement or a tough problem bring it to Udylite. Our experienced engineers and electro-chemists are at your service. Your inquiry will be handled promptly and efficiently.

THE UDYLITE CORPORATION

1651 E. Grand Blvd., Detroit, Mich.

Chicago
1943 Walnut Street

Long Island City, N. Y.
11-16, 44th Drive

Cleveland
4408 Carnegie Ave.

INDEX TO ADVERTISERS

Abbott Ball Co., The, Hartford, Conn. 658
Acme Mfg. Co., Detroit, Mich. 659
Advance Polishing Wheels, Inc., Chicago, Ill. 665
Alsop Engineering Corp., Milldale, Conn. 600

Baker Company, M. E., Cambridge, Mass. 658
Baker & Co., Inc., Newark, N. J. 613
Blakeslee & Co., G. S., Chicago, Ill. 616
Burns, E. Reed Mfg. Corp., Brooklyn, N. Y. 664

Ceilcote Company, The, Cleveland, Ohio 671

Darco Corporation, New York, N. Y. 609
Detroit Rex Products Co., Detroit, Mich. 660
Divine Brothers, Utica, N. Y. 661

Egyptian Lacquer Mfg. Co., New York, N. Y. 633
Empire Solvents Corp., New York, N. Y. 657
Enthone Co., The, New Haven, Conn. 602

Glasstone Book 635
Green Electric Sales Corp., New York, N. Y. 627
Gumm Chemical Co., Frederick, Kearny, N. J. ..... Second Cover

Hammond Machinery Builders, Kalamazoo, Mich. 373
Hanson-Van Winkle-Munning Co., Matawan, N. J. ..... Back Cover
Harrison & Co., Haverhill, Mass. 669
Harshaw Chemical Co., The, Cleveland, Ohio 629
Heatbath Corporation, Springfield, Mass. 625

Industrial Filter & Pump Co., Chicago, Ill. 617

Kocour Company, Chicago, Ill. 615

La Salco, Inc., St. Louis, Mo. 619
Lea Mfg. Co., Waterbury, Conn. 642-43
L'Hommedieu & Sons Co., Chas. F., Chicago, Ill. 660

McGean Chemical Co., Cleveland, Ohio 651
MacDermid, Inc., Waterbury, Conn. ..... Third Cover
Magnusson Products Corp., Brooklyn (2), N. Y. 668
Magnus Chemical Co., Garwood, N. J. 659
Meaker Company, The, Chicago, Ill. 611
Mechanical Process, South Orange, N. J. 664
Merck & Co., Inc., Rahway, N. J. 668
Mitchell-Bradford Chemical Co., Bridgeport, Conn. 667

Oakite Products, Inc., New York, N. Y. 599

Phillips Mfg. Co., Chicago, Ill. 607
Plating Processes Corp., Holyoke, Mass. 649
Puritan Mfg. Co., The, Waterbury, Conn. 671

Roberts Rouge Co., Stratford, Conn. 667

Seymour Mfg. Co., The, Seymour, Conn. 631
Stevens, Frederic B., Detroit, Mich. 596
Storts Welding Co., Meriden, Conn. 662
Sturgis Products Co., Sturgis, Mich. 598
Stutz, George A. Mfg. Co., Chicago, Ill. 669
Sulphur Products Co., Inc., Greensburg, Pa. 661

Udylite Corporation, The, Detroit, Mich. 691
United Chromium, Inc., New York, N. Y. 623

Westvaco Chlorine Products Corp., New York, N. Y. 594
Wyandotte Chemicals Crop., J. B. Ford Division, Wyandotte, Mich. 605
Wyandotte Paint Products Co., Rackote Division, Wyandotte, Mich. 593

Zapon Division, Atlas Powder Co., Stamford, Conn. 621
Zialite Corporation, Worcester, Mass. 665

Try the Thorough Oakite Way

Scale and Oxide Removal!

Specially designed to degrease before and strip tin after scale and oxide removal by the Bullard-Dunn De-Scaling Process, Oakite Composition No. 90 will HELP YOU do these two important operations with the SPEED and THOROUGHNESS so essential in the manufacture of such war supply items as airplane and machine gun parts, armor piercing shells, shot, tank parts and others.

To avoid possible slowing up of action as well as any contamination of Bullard-Dunn Process bath, ALL grease, carbon and other deposits must be removed from parts. You will find that Oakite Composition No. 90, used anodically, SPEEDILY degreases parts . . . assures chemically clean surfaces.

Oakite Composition No. 90 is excellent for removal and recovery of tin film after Bullard-Dunn Process. It strips film completely in a fraction of a minute . . . does the job SAFELY . . . leaves parts thoroughly clean and bright. Full details are FREELY available. Write today; there's no obligation.

OAKITE PRODUCTS, INC., 40 Thames St., New York 6, N. Y.

Technical Service Representatives Located in All Principal Cities of the United States and Canada

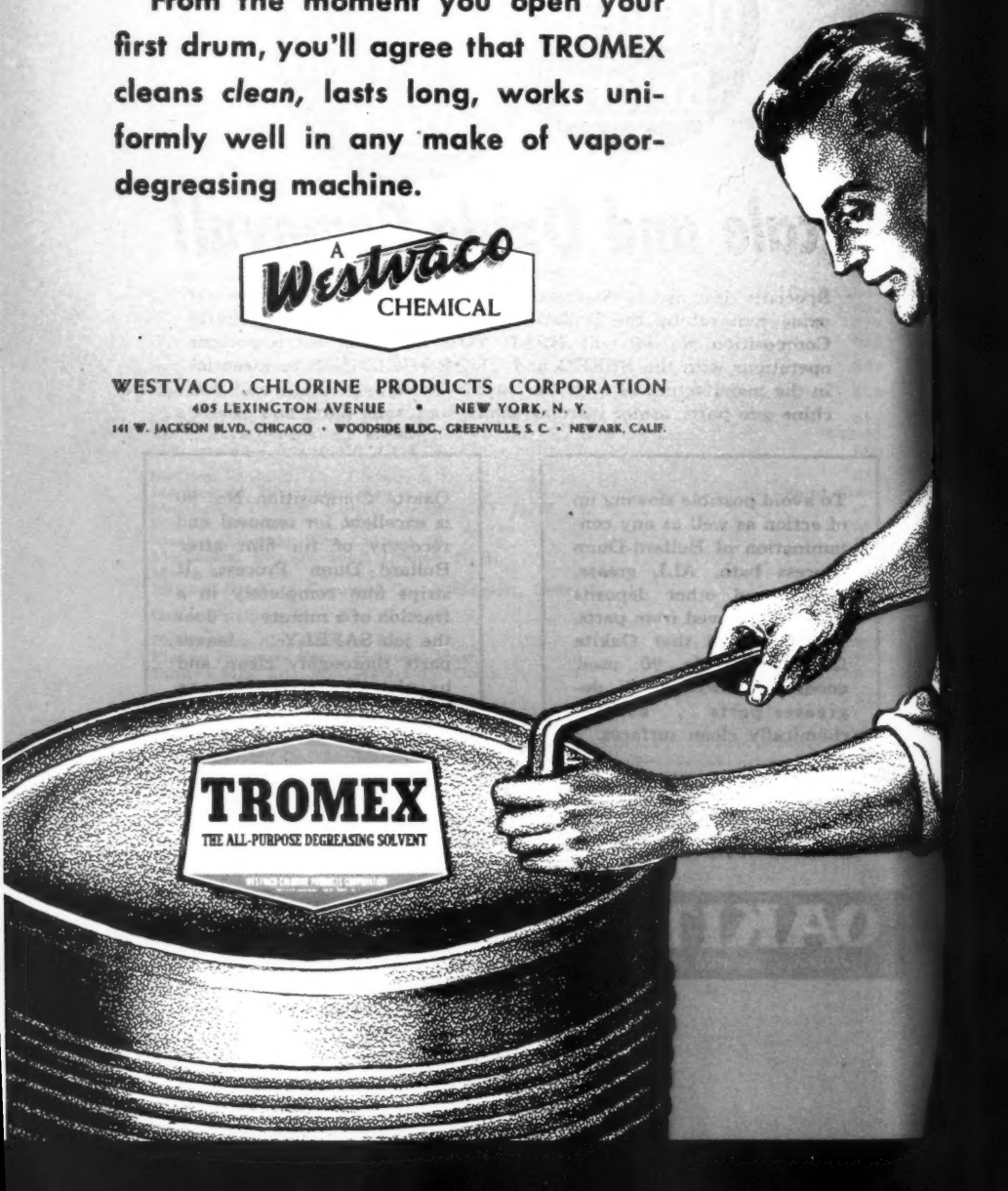
OAKITE MATERIALS - METHODS SERVICE — Buy Bonds for Victory — **CLEANING** FOR EVERY CLEANING REQUIREMENT

TROMEX—the *improved* trichlorethylene degreasing solvent is designed to resist solvent-breakdown (rather than merely neutralize acid products of decomposition after they have formed).

From the moment you open your first drum, you'll agree that TROMEX cleans *clean,* lasts long, works uniformly well in any make of vapor-degreasing machine.

A Westvaco CHEMICAL

WESTVACO CHLORINE PRODUCTS CORPORATION
405 LEXINGTON AVENUE • NEW YORK, N. Y.
141 W. JACKSON BLVD., CHICAGO • WOODSIDE BLDG., GREENVILLE, S. C. • NEWARK, CALIF.



GET ALL THE FACTS

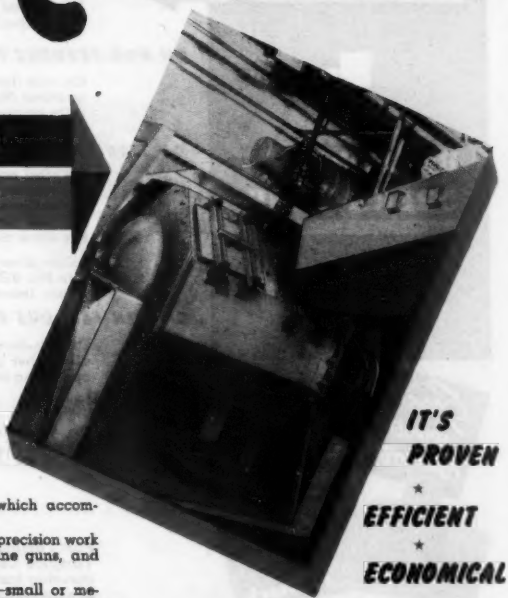
Don't Be Confused!

Roto-Finish

Is Not the Ordinary

Tumbling Method of

DE-BURRING
HONING
GRINDING
BUFFING
POLISHING



IT'S PROVEN

★

EFFICIENT

★

ECONOMICAL

and it's ***READY!***

It is a NEW and UNIQUE method which accomplishes almost unbelievable results.

Roto-Finish enables you to handle fine precision work on parts for airplane engines, machine guns, and countless other war production parts.

With Roto-Finish thousands of parts—small or medium—can be deburred, buffed, polished, and colored, either before or after plating, thus cutting down costly hand production methods.

Finishes preparatory to plating are obtained which are fully comparable to hand-buffed operations.

Write for illustrated folder and name of our nearest distributor. A representative will gladly call and explain Roto-Finish to you.

ROTO FINISH

THE STURGIS PRODUCTS CO.

MECHANICAL FINISHING MACHINERY AND SUPPLIES

STURGIS • MICHIGAN

FOR WAR TODAY—FOR YOUR PRODUCTS TOMORROW

TO MEET Any DEBURRING or BUFFING Requirement

DEBURRING OPERATIONS

BUFFING OPERATIONS

ON STEEL PARTS

On steel parts, on buffs, *Stevens Greaseless Burring Compound* works fast, enables the operator to remove burrs without damaging accurate parts, maintains close tolerances, leaves the work clean and free from grease. Three Grades—Coarse, Medium and Fine.

ON NON-FERROUS PARTS

On non-ferrous parts, *Stevens Tripoli Composition No. 70* works fast, easy to clean, permits accurate work, costs less than Greaseless Compounds.

ON STEEL PARTS

On steel parts: To remove tool marks, grinding lines, pits, scratches, and other surface imperfections, *Stevens Greaseless Compounds* cut fast, bring up a "satin"-type finish, leave the work clean and free from grease.

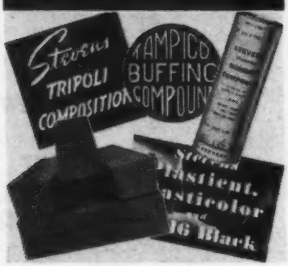
As an alternative . . . *Stevens Steel Composition No. 427* works fast, brings up a clear, high finish, leaves parts easy to clean.

ON NON-FERROUS PARTS

On non-ferrous parts: *Stevens No. 70 Tripoli*—also other grades are offered to meet unusual operating requirements of speed, pressures, etc.

ON PLASTICS

On plastics: *Stevens Plasticut* for Buffing, *Stevens Plasticolor* for finishing, and *Stevens No. 16* Black for dark colored plastics, bakelite, etc.



For Tampico Wheels and Brushes—Stevens Tampico Composition adheres to the tampico, insuring fast and accurate work on de-burring or other operations, maintains close tolerances, saves tampico—and is easy to clean.

FREDERIC B. STEVENS, INC.

DETROIT, MICHIGAN

New Haven Buffalo Cleveland Indianapolis Windsor Toronto

"EVERYTHING FOR THE POLISHING AND PLATING PLANT"